**Conquer Your Mountain: CTO Armando Escalante turned from couch potato to mountain climber – and enhanced his IT career along the way.** PAGE 22

# COMPUTERWORLD®

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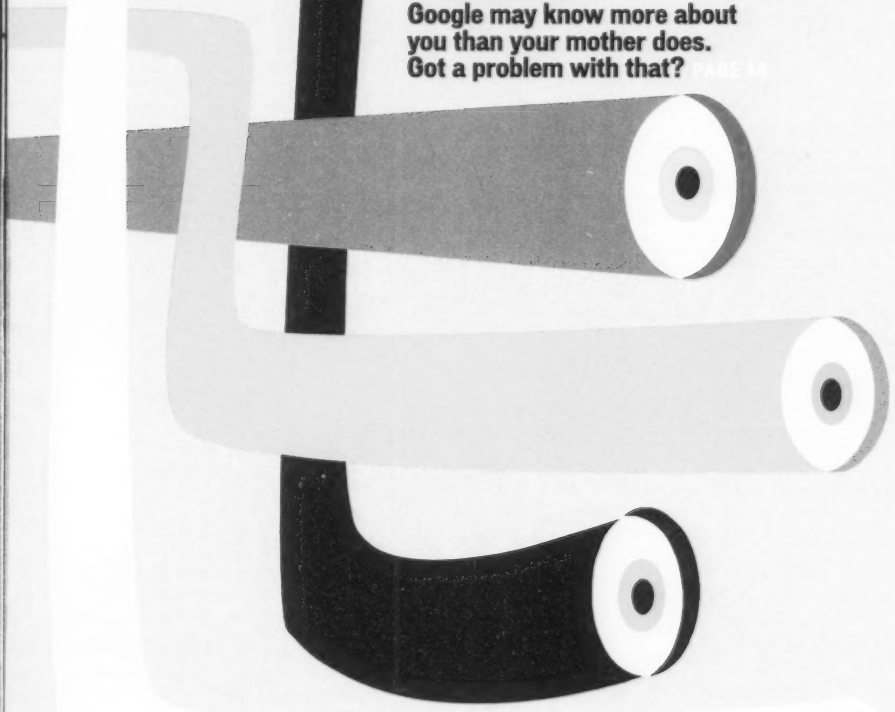
**Google may know more about you than your mother does. Got a problem with that?** PAGE 14

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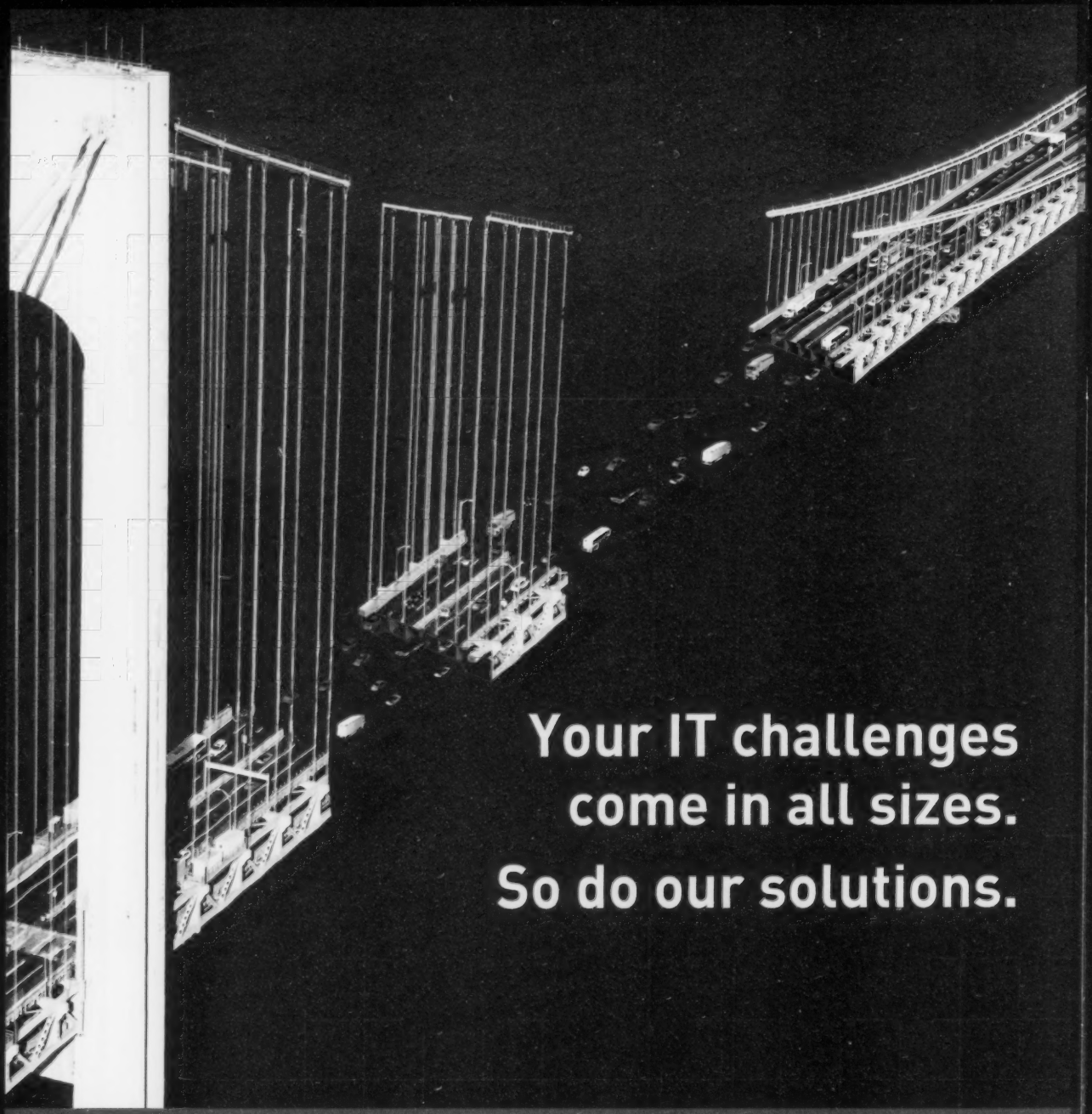

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**4 CA** says that 143 of its 166 mainframe **software products** now meet its **Mainframe 2.0** specifications. | **Oracle** starts offering **10% support discounts** to users of old versions of five **enterprise applications.**

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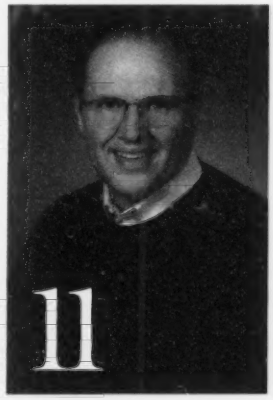


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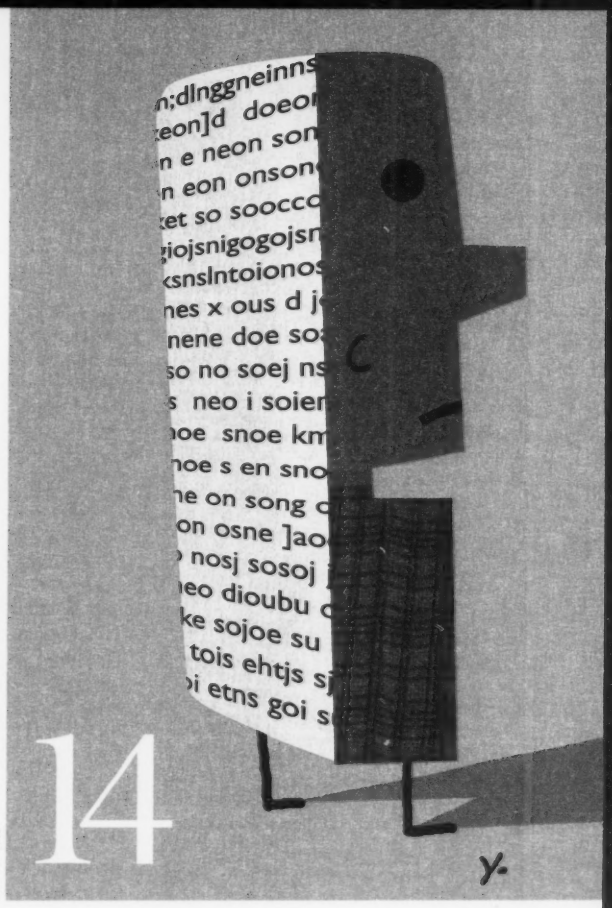


JAMES YANG

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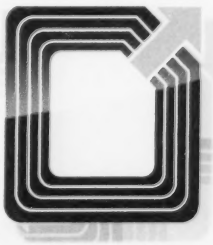

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Financial institutions say tagging IT assets speeds the inventory process.

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## ■ ONLINE CHATTER

**RESPONSES TO:**

### Is Desktop Linux Too Fragmented to Succeed?

Fragmentation is the key strength of GNU Linux. The thousands of GPL* projects, from single apps to the OS distributions, form a body where all modules can be replaced when better solutions emerge. All projects have their focus and goals but can also copy technology from related and competing projects. This is why desktop Linux is a success.
■ **Submitted by:** *GNU Evolution*

Diversity is one of the strengths of GNU/Linux, as in any ecosystem. Should one element of GNU/Linux run afoul of some litigious patent troll, another can be wheeled in to replace it. We all have our preferences, and while I can see a future where one variety becomes more fashionable among the growing numbers of Linux users, we need to encourage the underlying diversity and competition to ensure the long-term sustainability of GNU/Linux.
■ **Submitted by:** *Anonymous*

I think Linux is the best desktop OS around — for its intended audience. It's the market that is fragmented, with two main types of users: regular end users and power users. The regular end users don't care what they use as long as they can get stuff done, and they don't want to learn anything new, especially after using Windows for many years. It will take something revolutionary that Windows does not have to move them to Linux.
■ **Submitted by:** *Ram*

**RESPONSE TO:**

### Human vs. Machine: IBM Supercomputer Takes On *Jeopardy*

*April 27, 2009*

I would expect that the supercomputer's answers will be a mix of correct answers and spectacularly stupid ones. It should be very entertaining.
■ **Submitted by:** *Rob*

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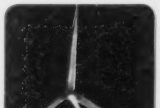
### How Facebook Mucks Up Office Life

**Managing a workforce has never been easy, but it's even harder now that Facebook and other social networks have spawned a host of sticky new situations.**

### A Look at Windows Server 2008 R2 Admin Tools

**HANDS ON: The new Windows Server 2008 R2 release candidate includes PowerShell cmdlets that let you manage Active Directory quickly and efficiently, and an administrative console that exposes the power of those cmdlets to more graphics-oriented users.**

### 10 IT Game-Changers



**The iPhone caused a tectonic shift in the IT landscape – what else out there will change our lives? No. 1 on our list: sensor technology like this microscopic prototype from Hewlett-Packard.**

### How Technology Is Changing What We Read

**Tech enthusiasts are coming up with new styles of literature, like Aya Karpinska's "zoom narrative" for the iPhone, *Shadows Never Sleep*.**

# News Digest

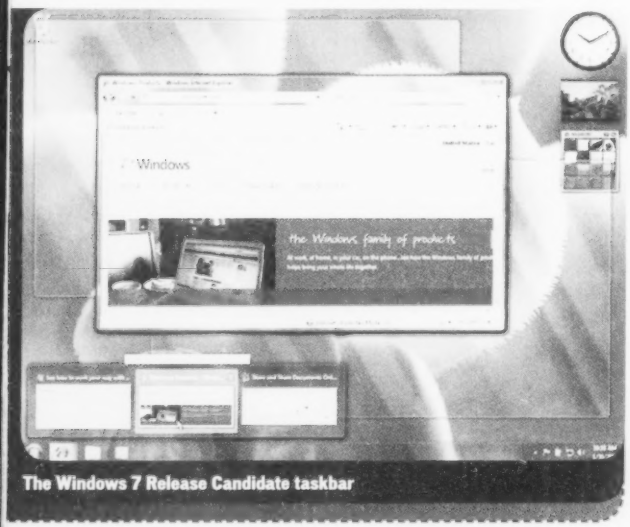
COMPUTERWORLD.COM

## THE WEEK AHEAD

**MONDAY:** Microsoft's annual Tech-Ed conference opens in Los Angeles.

**TUESDAY:** Microsoft plans to deliver single security update, a "critical" patch for a month-old PowerPoint bug. Also, Adobe has promised to patch the newest zero-day vulnerability in its popular Adobe Reader software by today.

**WEDNESDAY:** CA is scheduled to announce its financial results for its fourth fiscal quarter.




The Windows 7 Release Candidate taskbar

OPERATING SYSTEMS

## Microsoft's Windows 7 RC Made Available a Day Early

MICROSOFT CORP. last week launched its long-awaited Windows 7 Release Candidate to the public a day earlier than expected, posting the download before midnight Eastern time last Monday.

Unlike in January, when Microsoft's servers were overwhelmed by a rush of users eager to grab the first Windows 7 beta, last week's downloads went smoothly. However, some pages, including those that led to the activation keys needed for the download, did render slowly.

Microsoft said that it is not limiting the release of Windows 7 RC and that users will be allowed to run the software until June 1, 2010. A spokeswoman would not say why the company is giving users such a long free pass for the software. But Microsoft officials are facing a difficult task in prying users away from the popular Windows XP operating system and convincing them that it learned lessons from widespread Vista woes.

The Windows 7 RC can be downloaded until July 1, Microsoft said. The beta version of the software expires on Aug. 1.

Windows 7 RC is available in 32- and 64-bit versions. The 32-bit software weighs in at 2.47GB, while the 64-bit version tips the scales at 3.2GB. The company said that it does not provide support for the release candidate.

Microsoft has said that the software released last week will be the one-and-only release candidate it issues for Windows 7, which follows a single beta release of the new operating system. The schedule is somewhat unique: Microsoft usually runs its operating systems through multiple betas and multiple release candidates. For example, it delivered two betas and two release candidates for Windows Vista during that operating system's trouble-plagued development.

Microsoft has not disclosed a final ship date for the software, though an executive has reportedly said that Windows 7 could be shipping in time for the crucial holiday sales period. And based on comparisons to timelines of significant dates in the release process of predecessor operating systems Windows XP and Windows Vista, the new software could be generally available as early as August.

*— Gregg Keizer*

MOBILE & WIRELESS

## Google Adds Apps Link to BlackBerry

**Looking to increase corporate use of its hosted Google Apps offerings, Google Inc. last week unveiled a tool that's designed to make it easier for users of BlackBerry mobile devices to use its Gmail, Contacts and Calendar software.**

**Google Apps Connector for BlackBerry Enterprise Server is slated to be generally available in July, the company said.**

**The new software is installed on Research In Motion Ltd.'s BlackBerry Enterprise Server, "connecting it to the Google Apps cloud," said Raju Gulabani, a product management director at Google, in a blog post.**

**Dan Olds, an analyst at Gabriel Consulting Group Inc., said the move should help Google in its quest to build up its business presence.**

**"We know [Google] wants to get into the corporate market more and become sort of an enterprise replacement for Microsoft and Exchange," Olds said. "This gives them a more compelling story toward this end."**

**– SHARON GAUDIN**

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ENTERPRISE APPLICATIONS

# CA Tools Open Mainframe Work to Younger Staffers

CA INC. last week said that 143 of its 166 mainframe products now comply with its so-called Mainframe 2.0 specifications, which are designed to ease the process of installing and managing the high-end software.

The Mainframe 2.0 strategy targets new IT workers who lack mainframe training, CA said. By automating or streamlining routine tasks, the updated software lets experienced mainframe systems administrators hand off some duties to less-seasoned IT staffers.

"Most kids who come out of college with Java or C [experience] get to work on Web pages," said Mark Combs, senior vice president and general manager for products in CA's mainframe business unit.

"It's going to be five years or more before they get to work on anything mission-critical," but if they have mainframe expertise, they can work on important tasks far earlier, said Combs.

CA last week also announced its Java-based Mainframe Software Manager, an application for implementing and managing CA products on IBM's z/OS mainframe platform, a key piece of the Mainframe 2.0 puzzle.

Richard Resnick, manager of IT systems and operations at University Community Hospital in Tampa, Fla., said the z/OS tool will help him immediately, while the upgraded mainframe software will be important in transitioning work to a new generation of IT employees.

Mainframe Software Manager will shorten the time-consuming task of going through documentation before installing products manually, Resnick said. "It's going to make my job a lot easier," he added.

Resnick also said that easier-to-use mainframe products will help the hospital make a smooth transition if he leaves. "At some point," he said, "it's going to be someone else's job."

*— Chris Kanaracus, IDG News Service*

## Short Takes

Micro Focus International PLC has agreed to acquire Borland Software Corp., a maker of application development tools, for $75 million. Separately, Micro Focus agreed to buy Compuware Corp.'s application testing and automated software quality business unit for $80 million.

Emulex Corp. has rejected an unsolicited bid by chip maker Broadcom Corp. to purchase the network components maker for $764 million in cash. Emulex said Broadcom undervalued the company, ignoring its earning potential in the Ethernet market.

IBM has bought the data discovery software assets of Exeros Inc. and plans to add the tools to its information management software line. Terms of the deal were not disclosed.

The payment processing firm Heartland Payment Systems Inc. has been reinstated to Visa Inc.'s list of service providers deemed to be compliant with the Payment Card Industry Data Security Standard.

SOFTWARE

# Oracle Cuts Some Support Prices – Temporarily

**JUST A WEEK** after rival SAP AG revised its plan to raise support costs, Oracle Corp. announced plans to offer small, short-term discounts to large customers using older versions of its software.

The company last week said it will delay for a year or two – depending on the application – the 10% increase in support fees charged to customers transitioning from the premier support program to the extended plan. Customers are moved to the latter plan once the version of software they're using has been available for five years.

The move was announced at the International Oracle Users Group's annual conference in Orlando. "We saw what is going on in the market," said Juergen Rottler, Oracle's executive vice president for customer services.

SAP last month said it is slowing the pace of price increases scheduled after it launched a mandatory Enterprise Support program last year.

The Oracle E-Business Suite Release 11i10, J.D. Edwards Enterprise 8.11, Siebel CRM 7.8 and Oracle Database 10g R2 applications are eligible for a year of waived fee increases. PeopleSoft Enterprise 8.9 is eligible for two years of waived increases.

Scott Rosenberg, CEO of Miro Consulting Inc. in Fords, N.J., said that users will welcome "any price relief from Oracle," but further cuts are unlikely. Oracle "guards its support revenue stream zealously," he said, so customers would have to "fight tooth and nail" for more cuts.

– ERIC LAI



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CAREERS

# Microsoft Lays Off 3,000, Says More Cuts Possible

MICROSOFT CORP. laid off 3,000 workers last week in the second wave of a major reduction announced in January. And in a memo to employees, CEO Steve Ballmer said more cuts are possible.

> "We will continue to closely monitor the impact of the economic downturn on the company and if necessary, take further actions.
> MICROSOFT CEO STEVE BALLMER, IN A MEMO ANNOUNCING THE LAYOFF OF 3,000 WORKERS

"As we move forward, we will continue to closely monitor the impact of the economic downturn on the company and if necessary, take further actions on our cost structure, including additional job eliminations," Ballmer wrote.

In January, Microsoft had disclosed plans to eliminate 5,000 positions, more than 5% of the 96,000 full-time workers it employed at the time. About 1,400 people were laid off then.

In an April 23 10-Q filing with the U.S. Securities and Exchange Commission, Microsoft said it set aside $237 million for severance payments to 3,400 laid-off employees, "all of whom are expected to leave the Company by June 30, 2010."

The filing also said that the company plans to hire 2,000 to 3,000 people over the next 18 months.

Matt Rosoff, an analyst at Directions on Microsoft, said sales of multiyear corporate licenses could be the key factor in a decision to make further cutbacks.

"The company is laser-focused on cost containment for FY 2010, so if revenues are down, they'll be looking to make cuts somewhere, and head count is the largest expense," he added.

Dan Olds, an analyst at Gabriel Consulting Group Inc., said the unusual layoff at Microsoft could be "a signal of how the economic crisis has impacted the tech industry," since Microsoft has in the past grown "bigger and more powerful" during lean economic times.

However, over the long term, these layoffs "might actually be a good thing for Microsoft," Olds said. "Over time, even the most successful and efficient company builds up a fat layer."

*— Eric Lai, with Sharon Gaudin*

BETWEEN THE LINES

*By John Klossner*

## BENCHMARKS LAST WEEK

**Open Text Corp. agreed to acquire rival content management tools provider Vignette Corp. for about $310 million in cash and stock.**

**A government audit found more than 760 high-risk vulnerabilities in 70 Web applications that could give attackers a path into critical back-end systems used to support air traffic control operations in the U.S.**

**10 YEARS AGO: Federal Reserve Chairman Alan Greenspan told an audience in Chicago that the use of information technology in industry has led to higher productivity, reduced labor costs and lower inflation.**

# Global Dispatches

## New South Wales Launches $100M E-health Project

NORTH SYDNEY, Australia – The New South Wales Department of Health last week said it plans to spend $100 million Australian ($74 million U.S.) over the next two years to create a statewide electronic health system that will replace paper-based health records in 188 public hospitals.

NSW Minister of Health John Della Bosca said the e-health system should be fully implemented by the end of 2010.

"This technology will improve the efficiency of hospital care and free up doctors and nurses to focus on patients and not paperwork," said Della Bosca.

Electronic medical record projects are already under way in the states of Tasmania and South Australia.

Rodney Gedda,
*Computerworld Australia*

## Rwanda, Coromatic Ink Data Center Deal

KIGALI, Rwanda – The Rwandan government has awarded Bromma, Sweden-based Coromatic AB a $5 million (U.S.) contract to construct a national data center. The data center will store all Rwandan government data and provide backup facilities for other countries in the region.

Romain Murenzi, the minister in charge of science and IT in the office of the Rwandan president, said the data center is a major initiative in the government's effort to improve the country's IT capabilities.

Work is slated to begin in September, with the facility scheduled to open in December.

Michael Malakata,
*Computerworld Zambia*

BRIEFLY NOTED

SAP AG has acquired Highdeal SA, a Paris-based maker of software for managing business transactions for service companies. Walldorf, Germany-based SAP plans to integrate Highdeal's software with its own billing tools to offer event-driven real-time rating and charging options. Terms of the deal were not disclosed.

Peter Sayer,
*IDG News Service*

Can Web 2.0 leaders Google, Facebook and Twitter fend off charging upstarts?

By Sharon Gaudin

# Staying on Top

THE VIEW from the top of the high-tech business world may be nice, but companies just need to look at the history of the industry to know it's not safe up there.

Market leaders must keep a close eye on their myriad competitors and copycats while also avoiding internal missteps. And top executives must not let the inflated egos that come with early successes get in the way of changing direction when necessary.

The Internet and fledgling Web 2.0 markets are a case in point. Some early leaders, like MySpace Inc. and Yahoo Inc., rapidly lost early share to newcomers. And now others, like Twitter Inc. and Facebook Inc., are working hard to avoid that fate. Even very successful companies like Google Inc. acknowledge that it's a struggle to maintain strong leads in their markets.

A few technology companies have thrived over the long term — IBM, Microsoft, Hewlett-Packard and Oracle come to mind — but most of them have had to bounce back from hard times at one point or another.

A company might be basking in the limelight one day, only to find itself confronting an insurmountable challenge the next and then facing a descent into obsolescence. It took years, but that was the fate of onetime highfliers like Digital Equipment Corp. and Sun Microsystems Inc.

Based on that history, Web 2.0 companies like Google, Facebook and Twitter, which have scratched and clawed their way to the top of their markets — in mind share, if not financially — will have to work harder to stay there.

Each of those three companies has momentum, buzz and millions of users. People don't talk about searching online for a new restaurant: they "Google" it. When Oprah Winfrey or NASA astronaut Mike Massimino wants to get the word out about something, they use Twitter. And when people — whether they aren't old enough to vote or are members of AARP — want to find out about a friend's big vacation or see the latest pictures of a niece, they go to Facebook.

"Yeah, these are the companies to beat," said Dan Olds, principal analyst at Gabriel Consulting Group Inc. "Everyone is aiming at these three targets. Every Web 2.0 company worth its salt wants to be Twitter or Facebook or, in their wildest dreams, Google. They're the ubiquitous services that everybody knows about and everybody wants to become."

Fending off an onslaught of competitors is not just a matter of continuing to figure out what users need and giving it to them. That's how a company gets to the top. Staying there means staying focused on the core business and avoiding distractions, Olds noted.

And, of course, it's vital to keep up with changes in technology, experts say.

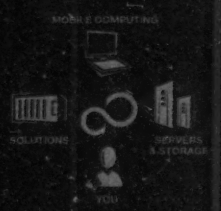
Mike Schroepfer, vice president of engineering at Palo Alto, Calif.-based Facebook, said "there's no question" that technology helped the firm rocket past

*Continued on page 8*

**"It's a pentathlon. We were good at running, and now we need to be good at swimming. The key is to realize there's not a single game to win at. Successful companies try to be the new David when they're the Goliath.** MICHAEL T. JONES, CHIEF TECHNOLOGY ADVOCATE, GOOGLE INC.

Fujitsu recommends Windows Vista® Business for business computing.
Fujitsu recommends Windows Vista® Home Premium for personal computing.

# When your life is caffeinated, you need a notebook that keeps up.

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*Continued from page 6*

social networking pioneer MySpace. A key difference between the two rivals is that Facebook identifies itself as a technology company while MySpace sees itself more as a media business, Schroepfer contended.

For instance, when Facebook wanted to branch out into non-English-speaking countries, it created an engine that let users translate the social network's English-language pages into any other language themselves. Facebook's users have so far translated the site into 35 languages, Schroepfer noted. "That got Facebook into more languages sooner so [our usage] spread faster," he said. "We grew internationally like a weed. It was in Spanish and German in two weeks, and French in 24 hours."

In fact, according to online researcher comScore Inc., MySpace still has more users in the U.S. than Facebook does — 75.9 million versus 55 million. But worldwide, Facebook's user base is close to double that of its rival. In December, comScore said that Facebook had recorded almost 222 million unique visitors, compared with 125 million for MySpace.

The ease of translating Facebook has been key to the social network's rapid rise to the top of its business, said Andrew Lipsman, director of industry analysis at Reston, Va.-based comScore.

Despite the creative ways that Facebook and Twitter have attracted users to their sites, they are still facing challenges that Google is already working hard to overcome. For example, Google is using revenue generated by its wildly popular search engine to help fund development of new products, such as Google Maps, Google News and Google Health, that are helping to diversify its revenue base.

Twitter, especially, is still mostly a one-trick pony. While the microblogging site has been adding new users at an astronomical rate over the past year, it remains only a specialized blogging site. Twitter is already facing competition from Facebook, which in March added a tool that enables users to post brief messages — think tweets — to an unlimited number of friends. Its success has also attracted competition from start-ups that hope to replace Twitter as the company with the latest cool app.

John Byrne, a senior analyst at Technology Business Research Inc., said that although Twitter is now at the top of the microblogging pile, its position is precarious. "It looks like their shelf life may be limited," he said recently. "They are one-dimensional, and people are getting the concept."

How easy would it be to out-tweet Twitter?

Biz Stone, co-founder of Twitter, said the company already has experience in dealing with pesky up-and-comers, noting that his latest list of Twitter clones includes about 250 sites. Stone said the key for Twitter at this point is to gain perspective by checking potential competitors in the rearview mirror, but not to let that view influence its decision-making process. "You have to keep pushing forward and innovating," he said.

**Everyone is aiming at these three targets. Every Web 2.0 company worth its salt wants to be Twitter or Facebook or, in their wildest dreams, Google. They're the ubiquitous services that everybody knows about and everybody wants to become.**

PRINCIPAL ANALYST, GABRIEL CONSULTING GROUP INC.

## INNOVATION IMPERATIVE

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"Facebook needs to focus maniacally on serving its user base," Olds said. "They need to fully understand what users want from Facebook, while at the same time looking for other services that would be a good fit for the site" — such as the recently added Twitter-like feature — or even forming a partnership with a newcomer like Twitter.

Michael T. Jones, chief technology advocate at Google, agreed that innovation is the most important factor in long-term success.

"The real issue is to constantly reshape yourself for the constant challenges," he said. "It's more than just a race. It's a pentathlon. We were good at running, and now we need to be good at swimming. The key is to realize there's not a single game to win at. Successful companies try to be the new David when they're the Goliath."

Jones noted that Google enables every one of its employees, from the newest hire to the top-ranking engineer, to help it come up with the next big thing. All employees are allowed to use 20% of their time in the office to work on whatever they want, be it a new business plan or a new Google feature.

"We're building products people want and not what products are on our five-year plan. Would the oldest CEOs come up with Twitter?" asked Jones. "It's the opposite of saying I'm a successful oil company with oil in the ground or a lumber company with a lot of trees. Here you have a person-to-person vote every time someone uses or doesn't use your product. If you come to Google Maps, it's because you didn't go to MapQuest. If you come to Google [search], it's because you didn't go to Yahoo."

And that lesson applies not just to the likes of Google, Facebook and Twitter. After battling their way to the top, most companies should focus on the fact that no one has a permanent strategic advantage. And there's an art in staying focused on what you need to do to keep customers happy now, while simultaneously figuring out what customers are going to need later.

"If you want to survive forever, you need to be different 50 years from now, because your customers won't be the same 50 years from now," said Jones. "We put some energy in what customers want and some energy in what they will want and a little energy in things that they may want someday." ■

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*Continued from page 6*

social networking pioneer MySpace. A key difference between the two rivals is that Facebook identifies itself as a technology company while MySpace sees itself *more as a media business*, Schroepfer contended.

For instance, when Facebook wanted to branch out into non-English-speaking countries, it created an engine that let users translate the social network's English-language pages into any other language themselves. Facebook's users have so far translated the site into 35 languages, Schroepfer noted. "That got Facebook into more languages sooner so [our usage] spread faster," he said. "We grew internationally like a weed. It was in Spanish and German in two weeks, and French in 24 hours."

In fact, according to online researcher comScore Inc., MySpace still has more users in the U.S. than Facebook does — 75.9 million versus 55 million. But worldwide, Facebook's user base is close to double that of its rival. In December, comScore said that Facebook had recorded almost 222 million unique visitors, compared with 125 million for MySpace.

The ease of translating Facebook has been key to the social network's rapid rise to the top of its business, said Andrew Lipsman, director of industry analysis at Reston, Va.-based comScore.

Despite the creative ways that Facebook and Twitter have attracted users to their sites, they are still facing challenges that Google is already working hard to overcome. For example, Google is using revenue generated by its wildly popular search engine to help fund development of new products, such as Google Maps, Google News and Google Health, that are helping to diversify its revenue base.

Twitter, especially, is still mostly a one-trick pony. While the microblogging site has been adding new users at an astronomical rate over the past year, it remains only a specialized blogging site. Twitter is already facing competition from Facebook, which in March added a tool that enables users to post brief messages — think tweets — to an unlimited number of friends. Its success has also attracted competition from start-ups that hope to replace Twitter as the company with the latest cool app.

John Byrne, a senior analyst at Technology Business Research Inc., said that although Twitter is now at the top of the microblogging pile, its position is precarious. "It looks like their shelf life may be limited," he said recently. "They are one-dimensional, and people are getting the concept."

How easy would it be to out-tweet Twitter?

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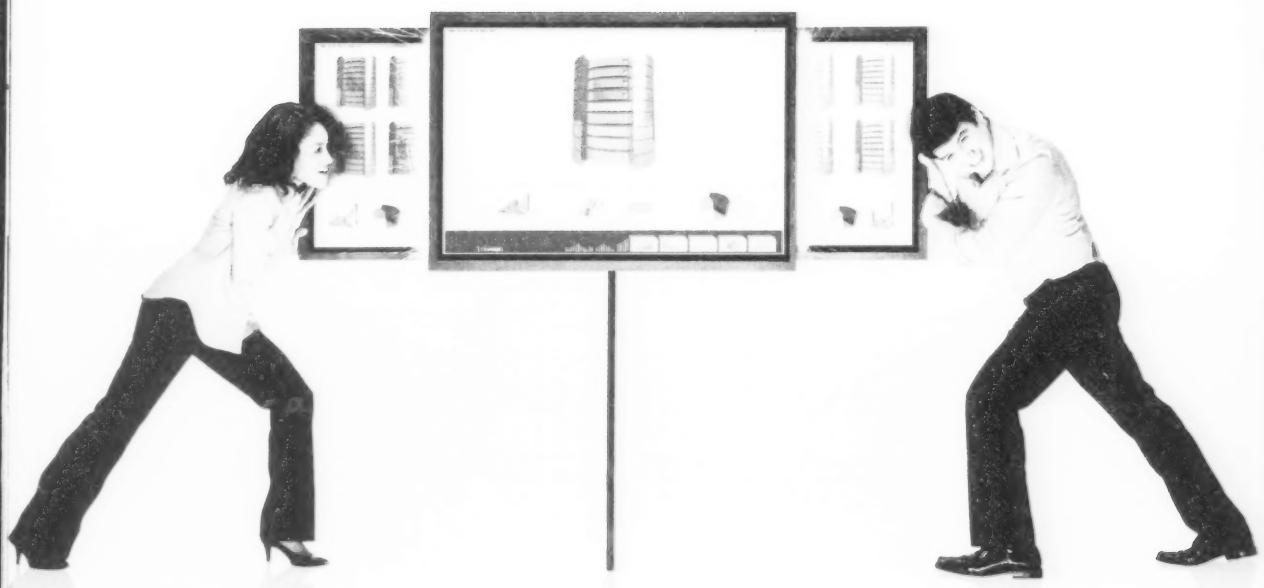

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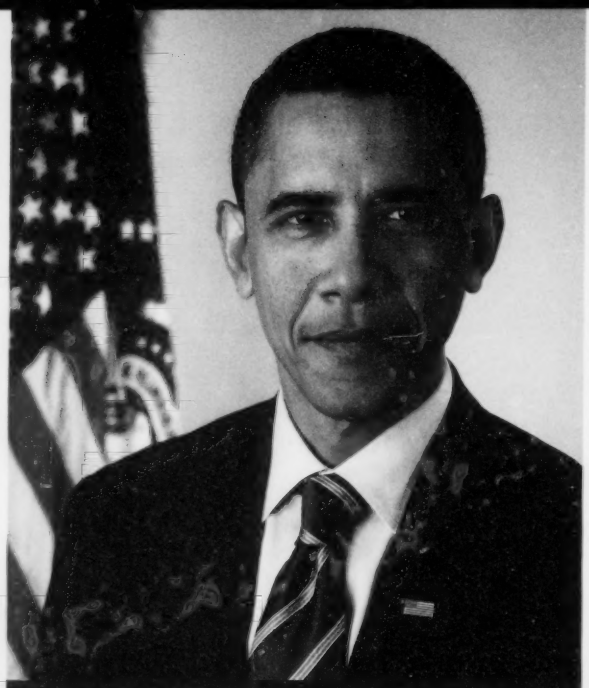

President Barack Obama: **The U.S. tax code "says you should pay lower taxes if you create a job in Bangalore, India, than if you create one in Buffalo, N.Y."**

# EXPERTS: TAX CHANGES WON'T CURB OFFSHORING

## Lower salaries are driving IT vendors to open offices overseas.

**By Patrick Thibodeau**

ANALYSTS AND tax experts contend that federal tax-code changes proposed by President Barack Obama last week likely won't meet his goal of persuading IT vendors to curb plans for opening and expanding offshore facilities.

The proposed tax changes, which must be approved by Congress, would affect IT vendors that run various operations overseas by disallowing deductions for various offshore expenses, including payroll, said Alan Appel, a tax attorney at Bryan Cave LLP in New York.

"By denying the [payroll] deduction, the hope is that it will be more expensive to operate offshore and it will give incentives to create jobs in the U.S.," Appel said.

However, Peter Bendor-Samuel, CEO of Everest Group, an outsourcing consultancy in Dallas, noted that the major motivation for IT vendors to move work overseas is the wide gap between salaries in the U.S. and those in many other countries. A job that pays $100,000 in the U.S. may cost only one-sixth that amount in India, Bendor-Samuel said.

Siddharth Pai, a partner at outsourcing consultancy Technology Partners International in Houston, said that IT vendors also establish software and services operations in countries like India because it's easier to find talented technical workers in sufficient numbers there. He added that India has a young population, where as the U.S.'s is older — demographics that work in India's favor when companies are debating whether to expand overseas operations.

"If there is a tax consequence, it's *de minimis* to the overall impact" of outsourcing, Bendor-Samuel said. In any case, "this idea that people are doing outsourcing to avoid taxes is simply wrong."

Obama didn't address the wage gap in announcing the tax proposal, but he argued that the tax code has played a role in the growth of offshoring, including the outsourcing of jobs for highly skilled professionals.

In his remarks, he said that major Indian IT outsourcing center Bangalore has been a strong beneficiary of current U.S. tax laws. The U.S. has developed "a tax code that says you should pay lower taxes if you create a job in Bangalore, India, than if you create one in Buffalo, N.Y.," Obama said. Current tax laws give companies that create jobs overseas the ability to take deductions on expenses "when they do not pay any American taxes on their profits," he added.

Several top U.S. IT vendors, including Cisco, Dell, IBM, Hewlett-Packard and Microsoft, run software development and services subsidiaries in India.

The proposed tax-code change is about as close as the White House has come to addressing the controversial issue of IT offshoring. In fact, the administration has yet to address the H-1B visa program, which is heavily used by Indian outsourcers to bring foreign workers to the U.S. Experts say it's unknown how or whether Obama will tackle that issue.

Sang Kim, a partner in the international tax practice in the East Palo Alto, Calif., office of law firm DLA Piper, said that if anything, the tax code changes could have unintended consequences that could accelerate the flow of jobs overseas. A foreign country could, for instance, encourage U.S. companies to create jobs by offering subsidies that would mitigate the impact of changes to the U.S. tax code, he said.

"The argument is that it should stem the flow of jobs leaving the U.S., but the reality is I don't think the jobs are moving outside the U.S. because of tax policy," Kim said.

Meanwhile, India's National Association of Software and Service Companies responded to Obama's proposal by contending that U.S. businesses with global operations would have a harder time competing with their European and Japanese counterparts as a result of the tax changes. ■

**John Ribeiro** *of the IDG News Service contributed to this story.*



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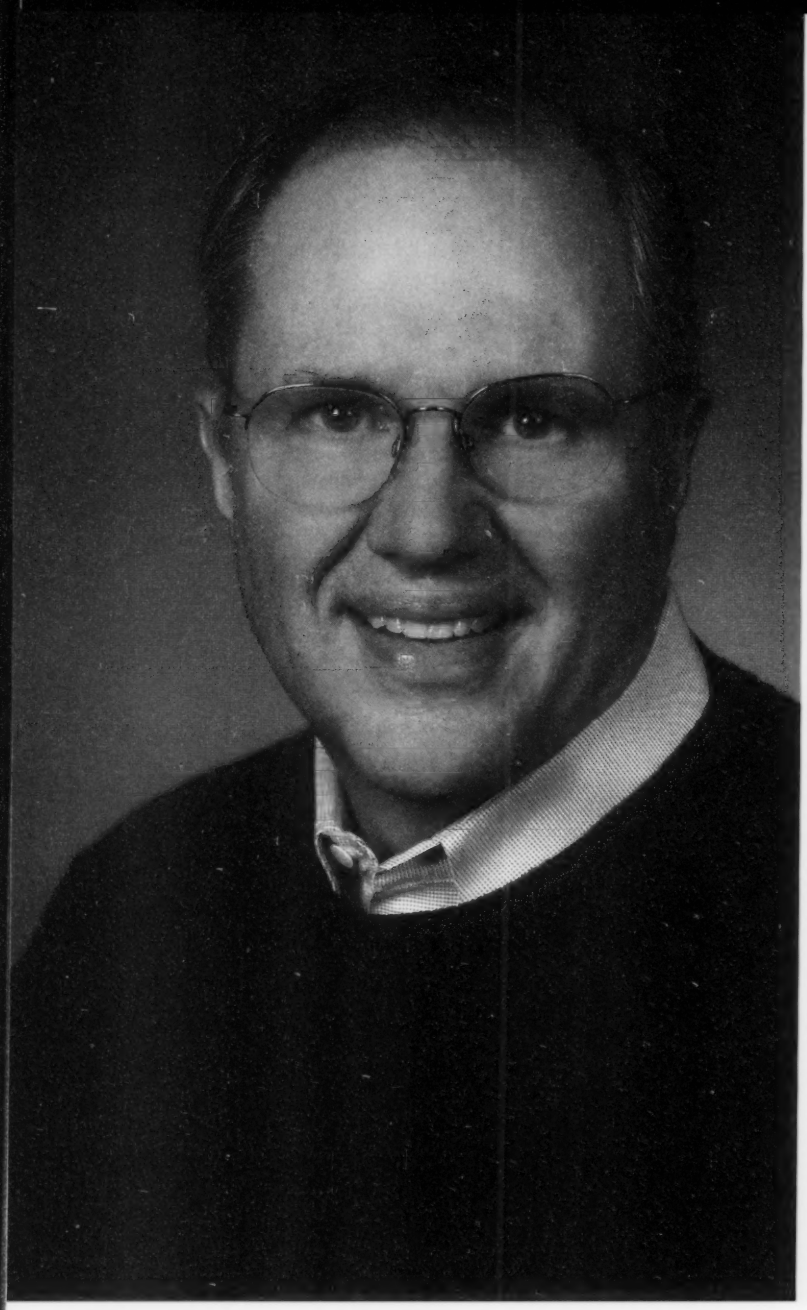


■ THE GRILL

# Craig Mundie

## Microsoft's **chief visionary** talks about **recession R&D,** backward compatibility and **the next wave** in technology.

## Dossier

**Name:** Craig Mundie

**Title:** Chief research and strategy officer

**Organization:** Microsoft Corp.

**Location:** Redmond, Wash.

**Favorite technology:** High-end digital cameras and lenses

**Favorite nonwork pastime:** "My boat, *Serendipity*."

**Role models:** "I have two friends who together are my role models: Henry Kissinger and Lee Hartwell."

**Philosophy in a nutshell:** "Utmost integrity and intellectual honesty in everything I do."

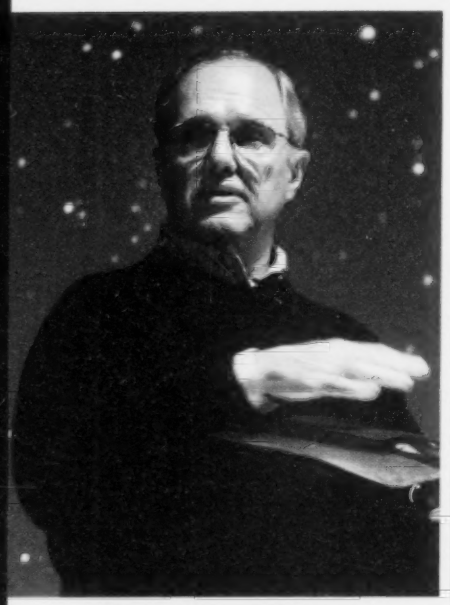
**Favorite movie:** *Top Gun*

**Ask him to do anything but . . .** "Eat tuna casserole."

*Craig Mundie assumed his position as chief visionary at Microsoft in June 2008, after Bill Gates retired from day-to-day operations.*

**Will belt-tightening require Microsoft to scale back on basic research, as some competitors have?** No. We have an opposite view, which is the tighter the economic times, the more the focus has to be on maintaining your R&D investment. You want the normal cycle to produce timely results, but we've always believed that the pure research component was critical to us. It gives us the ability to continue to enhance the businesses we're in [and] to disrupt industries that we choose to enter, [and] it's a shock absorber that allows us to deal with the arrival of the unknown from competitive actions or other technology breakthroughs.

**How do you balance the need for backward compatibility with the need to innovate?** There are several ways we seek to insert innovation into products. First, we develop new features for the products we have. Second, we create new products and put them alongside the products we have. As we look in the platform and tools areas toward the future, we expect that there's a lot



**"We're now trending to the next big platform, which I call the client plus the cloud.**

of change coming in the underlying architectures — for example, like virtualization and the fact that there will be many CPU elements that actually allow some of the side-by-side execution of things. That can provide perfect compatibility while still allowing the introduction of whole new capabilities.

**What is your proudest R&D achievement?** I did a lot of the early work in non-PC-based computing. Things that we have today that have matured into our game console business, our cell phone business and our Windows CE-based, Windows Embedded and Windows Mobile capabilities all started in the groups I formed here between 1992 and 1998.

I look at the progress we've made there, and I take quite a bit of pride in the fact that we anticipated those things and we were able to get into so many of them. The company's strategy was to recognize that, ultimately, people would have many smart devices, and we wanted to have some cohesive way of dealing with all of them.

**What will be the next big technology wave?** What happens in waves is the shift from one generation of computing platform to the next. That platform gets established by a small number of killer apps. We've been through a number of these major platform shifts, from the mainframe to the minicomputer to the personal computer to adding the Internet as an adjunct platform. We're now trending to the next big platform, which I call the client plus the cloud. That's one thing, not two things. Today we've got a broadening out of what people call the client. My 16 years here was in large measure about that. And then we introduced the network. The Internet was a place where you had Web content and Web publishing, but other than being delivered on some of those clients, the two things were somewhat divorced.

The next thing that will emerge is an architecture that allows the application developer to think of the cloud plus the client architecturally as a single thing. In a sense, it is like client/sever computing in the enterprise.

What the world is searching for now is the right combination of underlying technologies and some killer apps that will demonstrate that the capabilities of this integrated end-to-end view of the cloud plus client will enable things that the world hasn't seen yet.

**What technologies will drive this?** The technologies come at two levels. What are the underlying shifts in the lower-level platform technologies that will allow that to happen? And what are the things that might change the user's experience in some fundamental way?

There are two big things that form the nucleus of those two big changes. The microprocessor itself is going to change to this heterogeneous, many-core capability over the next four or five years. To get performance, you're going to have to write parallel applications, and if it's cloud plus client, you're going to have to write distributed parallel applications. Those have historically been viewed as hard problems, but they will have to become de rigueur in the future.

The second thing is that the technologies of man-machine interaction are evolving and will be aided by the quantum change in computational capabilities, [so] that for the first time, client devices will be able to implement natural, more humanistic ways of dealing with people. We call that next era the natural user interface. Think of it as the successor to the graphical user interface. And yet you have to figure out, what are the killer apps?

**In the era of client plus the cloud, what will be the role of Windows?** How relevant was Windows when you thought the world was DOS? The answer is it became pretty relevant. That's the way I think about this problem now.

We're going to move to a new platform with new models of human interaction solving new problems at a higher level of abstraction. The operating system will be the thing that creates the mapping between the physics of the computing environment and our ability to write these applications and portray them for people.

You may not have the same direct association of the operating system as a part of the application. This doesn't mean you won't have clients in screens. That correlation remains. I'm describing a world where there's no less of a requirement for controlling complex hardware that arguably will get even more complicated. But the boundary between what the user associates as the app, what part lives in the cloud, what part lives on the device in their hand — those boundaries will be blurred.

There will be a new class of apps, and I think that those will be as different as the difference when we moved from the command-line interface to the Windows model. That's the way I see the future.

— *Interview by* **Robert L. Mitchell**

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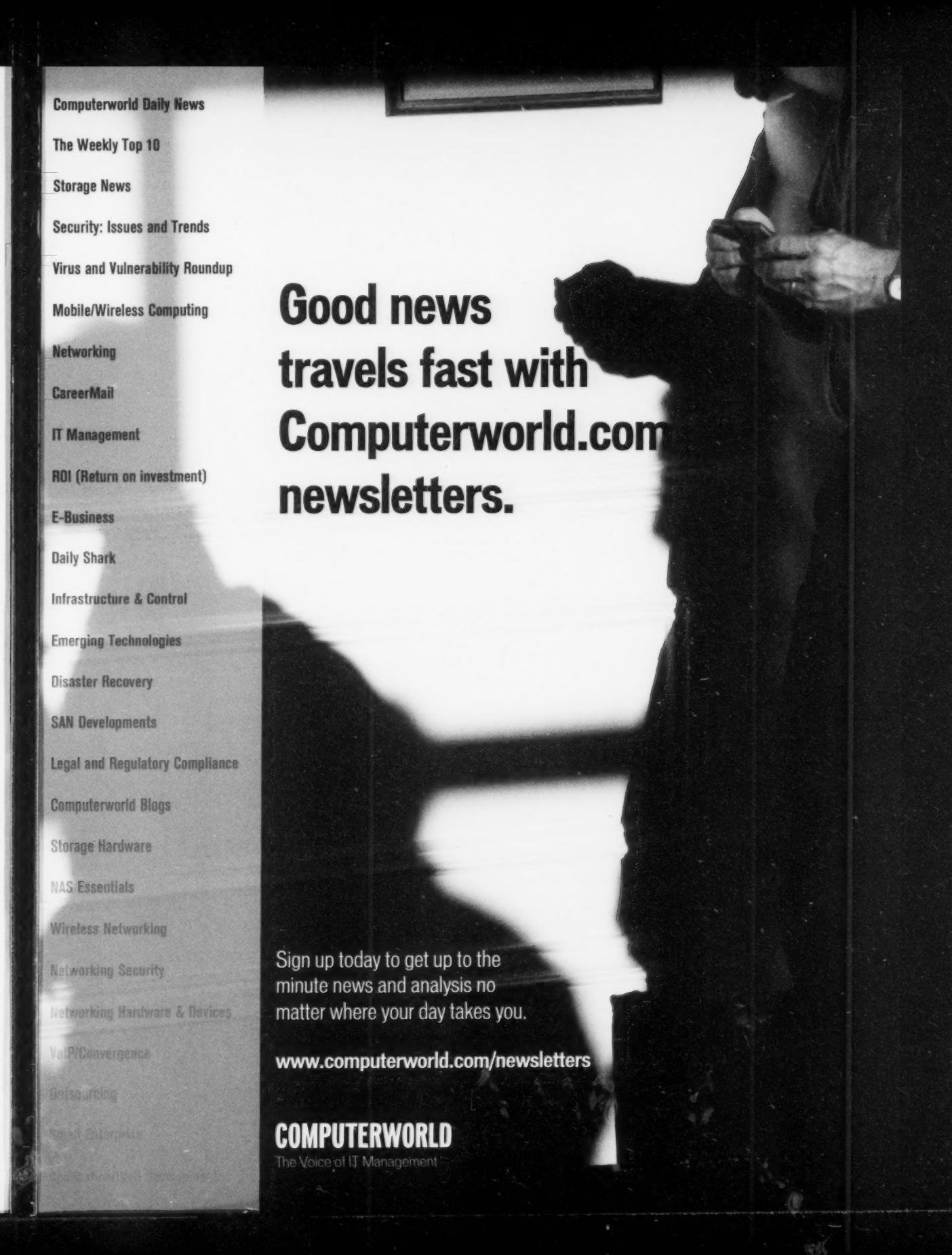
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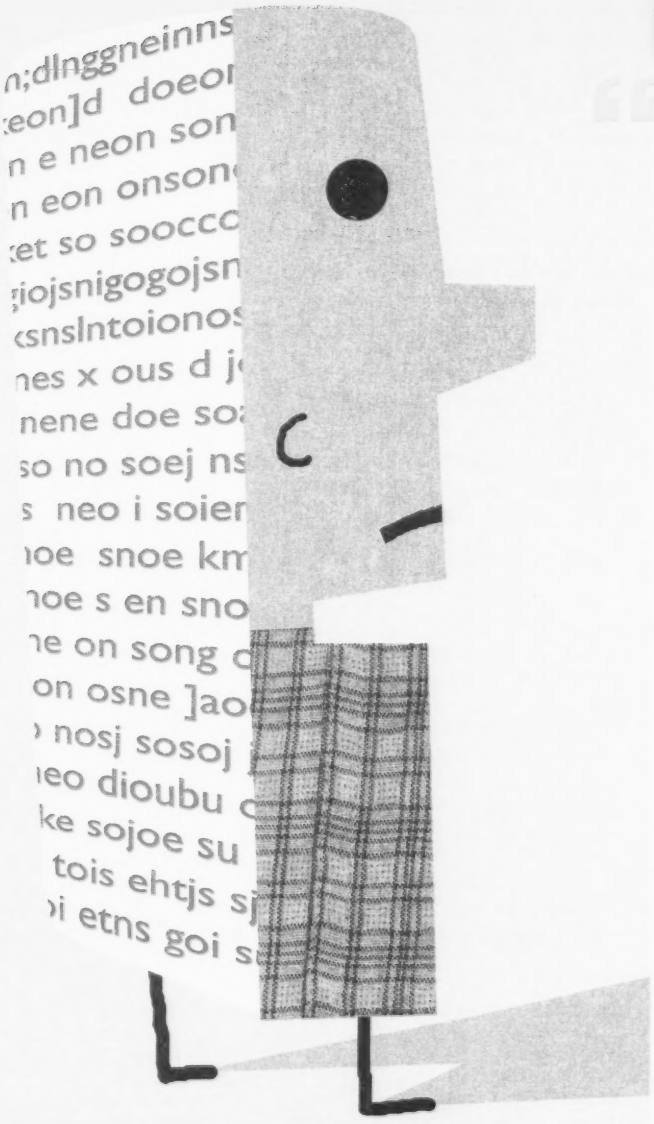
# WHAT GOOGLE KNOWS ABOUT You



JAMES YANG

**COVER STORY**

## Google may know more about you than your mother does. Got a problem with that?

By Robert L. Mitchell

"GOOGLE KNOWS more about you than your mother."

Kevin Bankston, senior staff attorney at the Electronic Frontier Foundation, recently made that statement to this reporter. A few years ago, it might have sounded far-fetched. But if you're one of the growing number of people who are using more and more products in Google's ever-expanding stable (at last count, I was using a dozen), you might wonder if Bankston isn't onto something.

It's easy to understand why privacy advocates and policymakers are sounding alarms about online privacy in general — and singling out Google in particular. If you use Google's search engine, Google knows what you searched for as well as your activity on partner Web sites that use its ad services. If you use the Chrome browser, it may know every Web site you've typed into the "Omnibox." It may have all of your e-mail (Gmail), your appointments (Google Calendar) and even your last known location (Latitude). It may know what you're watching (YouTube) and whom you are calling. It may have transcripts of your telephone messages (Google Voice). It may hold your photos in Picasa Web Albums, which includes face-recognition technology that can automatically identify you and your friends in new photos. And through Google Books, it may know what books you've read, what you annotated and how long you spent reading.

Technically, of course, Google doesn't know anything about you. But it stores tremendous amounts of data about you and your activities on its

servers, from the content you create to the searches you perform, the Web sites you visit and the ads you click.

Google, says Bankston, "is expecting consumers to trust it with the closest thing to a printout of their brain that has ever existed."

How Google uses personal information is guided by three "bedrock principles," says Peter Fleischer, the company's global privacy counsel. "We don't sell it. We don't collect it without permission. We don't use it to serve ads without permission." But what constitutes "personal information" has not been universally agreed upon.

Google isn't the only company to follow this business model. "Online tools really aren't free. We pay for them with micropayments of personal information," says Greg Conti, a professor at the U.S. Military Academy at West Point and author of the book *Googling Security: How Much Does Google Know About You?* But Google may have the biggest collection of data about individuals, the content they create and what they do online.

It is the breathtaking scope of data under Google's control, generated by an expanding list of products and services, that has put the company at the center of the online privacy debate. According to Pam Dixon, executive director at the World Privacy Forum, "No company has ever had this much consumer data" — an assertion that Google disputes.

## OPACITY VS. TRANSPARENCY

Critics say Google has been too vague in explaining how it uses the data it collects, how it shares information among its services and with its advertisers, how it protects that data from litigators and government investigators, and how long it retains that data before deleting or "anonymizing" it so that it can't be tracked back to individual users.

"Because of Google's opacity as to how it is using that data, and a lack of fundamental information rights [that] users have, [privacy] becomes a very thorny question," says Dixon. Privacy policy opacity isn't limited to Google. It's so prevalent, in fact, that the Federal Trade Commission warned the industry in February that online businesses will face increased regulation unless they produce privacy statements that explain in a "clear, concise, consumer-friendly and prominent" way what data the companies collect, how they use it and how users can opt out.

Google, however, contends that the concerns about opacity and the scope of data it collects are overblown. "I do push back on this notion that what we have is a greater privacy risk to users," says Mike Yang, product counsel in Google's legal department. Google, he says, gives users plenty of transparency and control. "There's this notion that an account has a lot more information than is visible to you, but that tends not to be the case. In most of the products, the information we have about you is visible to you within the service."

In fact, though, the data Google stores about you falls into two buckets: user-generated content, which you control and which is associated with your account; and server log data, which is associated with one or more

**"[Google] is expecting consumers to trust it with the closest thing to a printout of their brain that has ever existed.**

**KEVIN BANKSTON,** SENIOR STAFF ATTORNEY, ELECTRONIC FRONTIER FOUNDATION

browser cookie IDs stored on your computer. Server log data is not visible to you and is not considered to be personally identifiable information.

These logs contain details of how you interact with Google's various services. They include Web page requests (the date, the time and what was requested), query history, IP address, one or more cookie IDs that uniquely identify your browser, and other metadata. Google declined to provide more detail on its server log architecture, other than to say that the company does not maintain a single, unified set of server logs for all of its services.

Google says it won't provide visibility into search query logs and other server log data because that data is always associated with a physical computer's browser or IP address, not the individual or his Google account name. Google contends that opening that data up would create more privacy issues than it would solve. "If we made that transparent, you would be able to see your wife's searches. It's always difficult to strike that right balance," Yang says.

You do have more control than ever before. Google says it removes user-generated content within 14 days for many products, but that period can be longer (it's 60 days for Gmail). For retention policies that fall "outside of reasonable user expectations or industry practice," Google says it posts notices either in the privacy policy or in the individual products themselves.

You can control the ads that are served up, either by adding or removing interest categories stored in Google's Ads Preferences Manager or by opting out of Google's Double-click cookie, which links the data Google has stored about you to your browser in order to deliver targeted advertising.

Shuman Ghosemajumder, business product manager for trust and safety at Google, says users have nothing to worry about. All of Google's applications run on separate servers and are not federated in any way. "They exist in individual repositories, except for our raw logs," he says. But some information is shared in certain circumstances, and Google's privacy policies are designed to leave the company plenty of wiggle room to innovate.

Yang points to Google Health as an example. If you are exchanging messages with your doctor, you might want those messages to appear in Gmail or have an appointment automatically appear in Google Calendar, he says.

Google is hoping that what it lacks in privacy policy clarity, it can make up for in the transparency of its services.

But Dixon, who follows medical privacy issues, contends that they aren't transparent enough. Medical records, once transferred to Google Health, aren't protected by HIPAA or by the rules of doctor-patient confidentiality. Google states that it has no plans to use Google Health for advertising. But by sharing data across services, the company is blurring the lines, Dixon says.

If you have a health problem and you use Google Health, research the disease

*Continued on page 18*

By 2011 there will be 2 billion people
and 1 trillion connected objects on the Web.
A smarter planet needs smarter IT.
Let's build a smarter planet.
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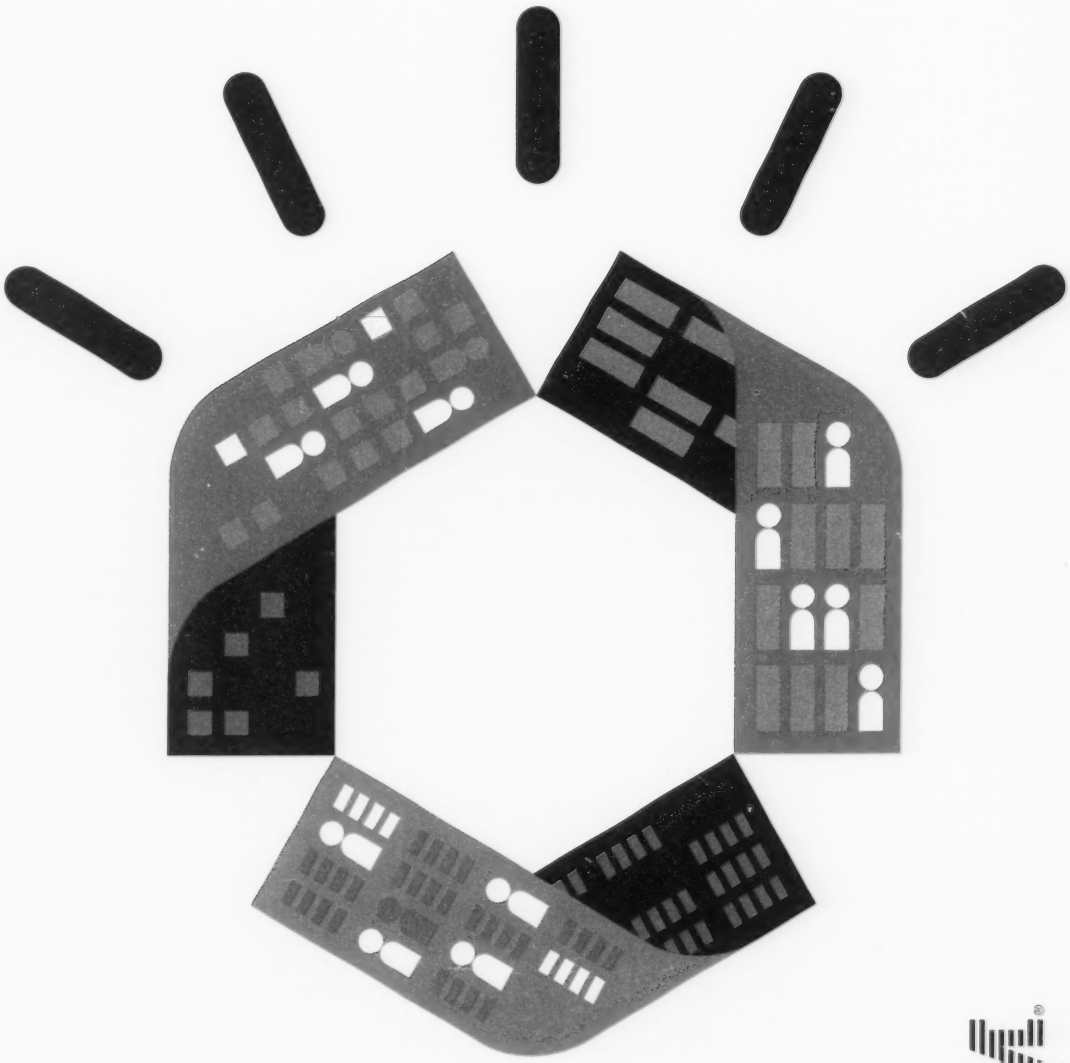

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# SIX WAYS TO PROTECT YOUR PRIVACY ON Google

**1. Know your privacy rights: Use the Google Privacy Center.** This site includes all of Google's privacy policies, as well as privacy best practices for each of its products and services. Although the "legalese" of privacy policies can be difficult to understand, Google's Privacy Channel offers a library of short YouTube videos with practical tips on protecting your data when using Google products and services. Try the "Search Privacy Tips" and "Google Privacy Tips" series.

**2. Protect your content on the services you use.** Some content that Google stores for you, such as photos uploaded in Picasa Web Albums, are public by default. You can protect your privacy when you upload photos by choosing the appropriate checkbox. Choices include "unlisted" (accessible only if you have the Web link, and not indexed by Web search engines) or private (viewable only by named users who must sign in). Another example: You can make Google Chat "off the record" if you don't want the instant messaging transcript stored.

In contrast, Google Latitude, which tracks your whereabouts by way of GPS-enabled cell phones, does not share your location data by default. You must authorize others to see it. Latitude stores your last known location, but not your history.

**3. Turn off the suggestion feature in the Chrome browser.** By default, Chrome retains a history of Web sites you've visited – and the full text of those pages – so it can try to guess which Web address you want as you type in the "Omnibox." You can turn the feature off. Go to "Under the Hood" under Options and uncheck the "Use a suggestion service" box. You can also check off other privacy options, including surfing in Chrome's "incognito" mode.

**4. Turn off Web History.** You may have turned on the Web History option, also called Personalized Search, when you first created your Google account. If so, Google may be maintaining a "personalized" search history for your use. Google does not use this data to target ads. It uses a separate search history, stored in Google's server logs and associated with a browser cookie, for that purpose. That data is "anonymized" after nine months. But your Web History is retained forever, unless you turn it off or delete the contents.

**5. Opt out of interest-based ad serving.** As of March 11, Google and third parties in its AdSense network are using not just contextual information (what you're searching for) but a history of previously viewed Web pages to serve up targeted advertising. The idea is to serve up ads that are more relevant to your interests.

You can remove interest categories Google has attributed to you or add others by visiting its Ad Preferences page. You can also opt out. To make the opt-out setting permanent, however, you'll need to install a plug-in for each browser you use. It's available for IE, Firefox, Chrome and Safari.

**6. Add SSL to Gmail.** You can encrypt e-mails you read and create in Gmail. Your log-in data is encrypted by default by SSL encryption, but SSL is turned off when you interact with your e-mail, because it can slow performance. You'll find the option in Settings under the General tab. Scroll to the bottom of the screen and select the "Always use https" option under the Browser Connection setting.

– ROBERT L. MITCHELL

*Continued from page 16*

using Google's search engine, use Gmail to communicate with your doctor, and link appointment details to Google Calendar, and your last location in Latitude was a medical clinic, Dixon asks, "What does the advertiser get to know about you? What about law enforcement? Or a civil litigant? Where are the facts? I don't have them, and that bothers me."

## CHANGE IN BEHAVIOR

Google's recent decision to change gears and mine what it knows about you to better target advertisements has also raised concerns.

Until recently, Google placed ads based on "contextual targeting" — derived from the subject of a search or a keyword in a Gmail message you were reading, for example. To avoid creeping people out with ads targeting sensitive subjects, it avoids the topics of race, religion, sexual orientation, health, political or trade union affiliation, and some sensitive financial categories.

With the information at its disposal, Google could pull together in-depth profiles of its users and launch highly targeted ads based on who you are (your user profile) and your activity history on the Web — a controversial practice known as behavioral advertising. Until recently, Google rejected the technique. Then, on March 11, Susan Wojcicki, vice president of product management, announced in a post on Google's official blog that the company was taking a step in that direction. With the launch of "interest-based advertising," Google is beginning to target ads based not just on context but on the Web pages you previously viewed.

That Web page history will come from a log associated with the cookie ID. However, since that ID links not to a unique user but to a unique browser, you may end up viewing ads for Web pages visited by your spouse or others who share your machine. In a bizarre catch-22, advertisers will be able to target ads at you based on logs that Google says it cannot make available to you — for privacy reasons.

**"We have all kinds of measures to ensure that third parties can't get access to users' private data."**

SHUMAN GHOSEMAJUMDER, BUSINESS PRODUCT MANAGER FOR TRUST AND SAFETY, GOOGLE INC.

Ghosemajumder acknowledges that the situation isn't perfect. "In some cases there is [transparency], and in some cases there isn't," he admits. But he says Google is "trying to come up with more ways to offer transparency."

Privacy advocates fear that interest-based advertising is just the first step toward even more targeted advertising based on what Google knows about you. "This is a major issue, because Google has been collecting all of this information over time about people and they said they would not be using that data," says Nicole Ozer, technology and civil liberties policy director at ACLU of Northern California.

But privacy advocates say Google is also doing some things right, such as launching its online Privacy Center and providing additional controls for some of its services.

Google is not acting alone in moving

*Continued on page 20*

Up to 85% of computing
capacity sits idle in
distributed environments.
A smarter planet needs
smarter infrastructure.
Let's build a smarter planet.
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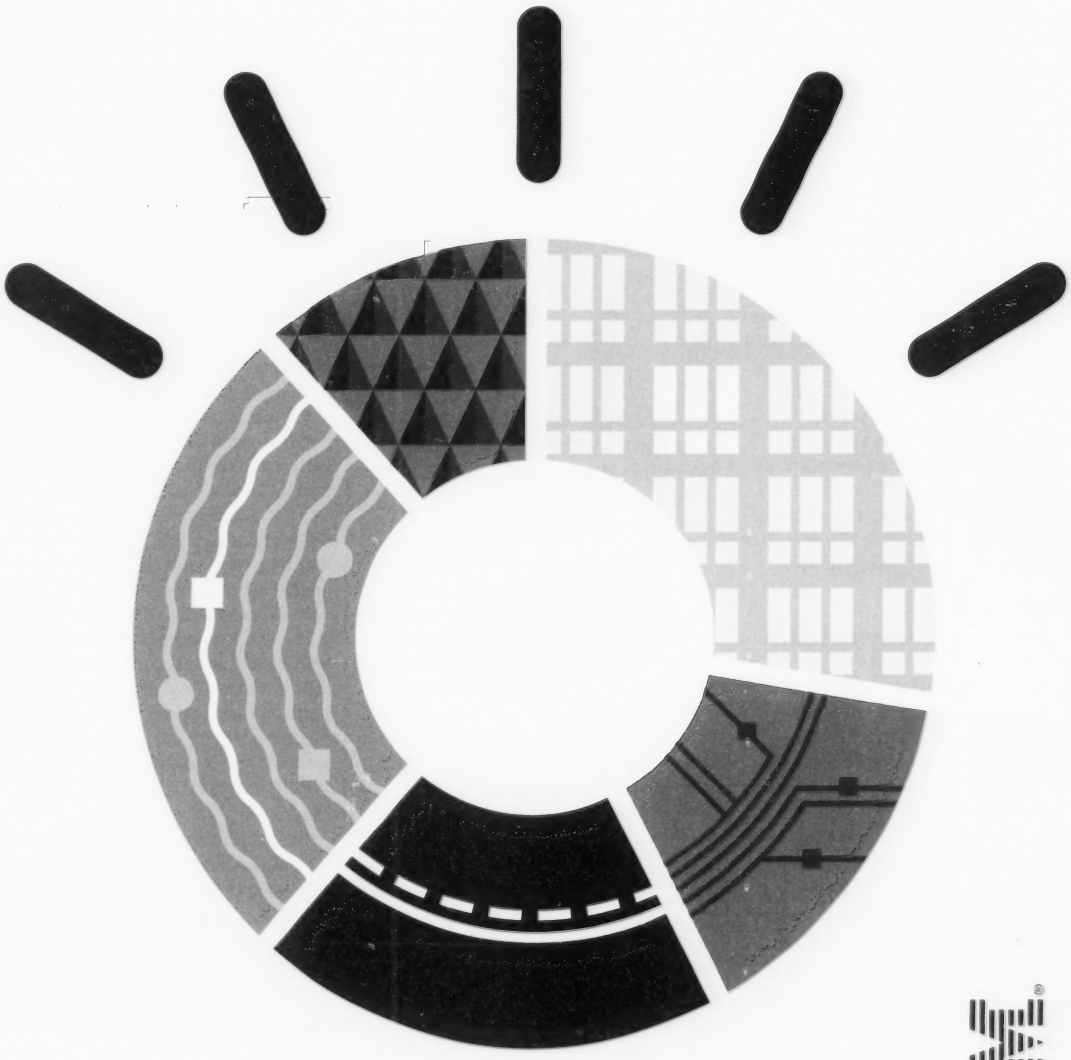

THINK

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*Continued on page 18*

toward behavioral advertising. It is simply joining many other companies that are pursuing this practice. Mike Zaneis, vice president of public policy at the Internet Advertising Bureau, acknowledges that highly targeted advertising can be creepy. But, he says, "creepiness is not in and of itself a consumer harm." The practice is unlikely to change unless users respond by abandoning services that use the techniques. But he argues that they won't because highly targeted ads are of more interest to users than nontargeted "spam ads."

Concerns have also been raised about Google's ability to secure user content internally. Google has had a few small incidents, such as when it allowed some Google Docs users' documents to be shared with users who did not have permission to view them. But that incident, which affected less than 1% of users, pales in comparison to security fiascoes at Google's competitors, such as AOL's release of search log data from 650,000 users in 2006.

Ghosemajumder says the privacy of user data is tightly controlled. "We have all kinds of measures to ensure that third parties can't get access to users' private data, and we have internal controls to ensure that you can't get access to data in a given Google service if you're not part of the team," he says.

## HOW ANONYMOUS?

Bowing to pressure, Google has made other concessions as well.

Google doesn't delete server log data, but it has agreed to anonymize it after a period of time so that the logs can't be associated with a specific cookie ID or IP address. After initially agreeing in 2007 to anonymize users' IP addresses and other data in its server logs after 18 months, it announced last September that it was shortening that to nine months for all data except for cookies, which will still be anonymized after 18 months. "All of our services are subject to those anonymization policies," says Ghosemajumder.

Sensing an opportunity, and facing similar criticisms, competitors have tried to go Google one better. Rather than anonymizing IP addresses, Microsoft deletes them after 18 months and has proposed that the industry anonymize all search logs after six months. Yahoo anonymizes search queries and other log data after three months, and the Ixquick search engine doesn't store users' IP addresses at all.

Perhaps the biggest concern for privacy advocates is how the treasure trove of data Google has about you might end up in the wrong hands. It is, says Bankston, a wealth of detailed, sensitive information that provides "one-stop shopping for government investigators, litigators and others who want to know what you've been doing."

Privacy laws provide little protection in this regard. Most policies — including Google's — don't provide an explicit guarantee that the company will notify you if your data has been requested through a court order or subpoena. "The legal protections accorded to data stored with companies [and] the data they collect about you is very unclear," says Bankston.

**"Google has been collecting all of this information over time about people and they said they would not be using that data.**

**NICOLE OZER,** TECHNOLOGY AND CIVIL LIBERTIES POLICY DIRECTOR, ACLU OF NORTHERN CALIFORNIA

The industry still relies on the Electronic Communications Privacy Act of 1986, a 22-year-old privacy law that even the government has argued doesn't apply to online data. "Google has yet to state a specific position on whether and how that law protects your search logs," Bankston says.

Privacy groups want Google to reveal just how many requests it receives from litigators and law enforcement and how it responds to those requests, but the company, like its competitors, does not release that information.

Google declined to elaborate on why it's not more forthcoming in this regard, but deputy general counsel Nicole Wong did say that it complies with legal requests "narrowly, appropriately and in accordance with the law."

In at least one high-profile case, Google has taken strong measures to protect the privacy of its subscribers. When Viacom issued a subpoena for the viewing records of Google's YouTube subscribers, it fought the subpoena and turned over only anonymized data that it says can't be traced back to individual users. But privacy watchers question what happens to the thousands of requests for individual records in less prominent cases. Google's response: "Our overarching principle is we want to notify users," Yang says.

Ozer thinks Google should collect less data and store it for shorter periods of time. That's one of her suggestions in a 44-page privacy and business primer for Web 2.0 companies published by ACLU of Northern California.

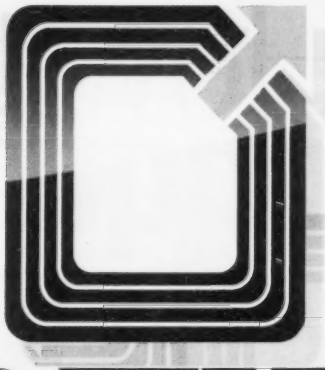
With lawmakers focused on the economy, privacy groups say it's unlikely that laws will change anytime soon. But they — and regulators — are pressuring Google to provide leadership and set the example. "For a company with so much data, they have a responsibility to be innovative, proactive and pro-consumer in the area of privacy," Dixon argues.

Parting with a certain amount of personal information is part of the bargain you strike when you sign up for free Web-based software and services. "People should have visibility into what information is being collected and how it will be used, and they should get to choose what they share and control who can access it," says Fleischer.

But the tension between your desire for privacy and Google's need for flexibility in handling your data is likely to be an ongoing dance. "Google's business is to make money from the information it gathers from its users. It will always be a give-and-take," says Bankston.

Eventually, updated privacy laws — and the choices users make — will delineate what is acceptable and what is not. "Our business model depends completely on user trust," says Yang. Part of Google's challenge is to build that trust without severely restricting the business's ability to innovate.

Google has done a good job on the trust side, Bankston says. He just wants to see it give users more transparency and control. "We don't want Google to stop innovating," he says. "We just want the law to keep up so that this data is safe." ■



# RFID IS FINDING A HOME IN THE DATA CENTER

## Financial institutions say tagging IT assets speeds the inventory process.

**By David Raths**

EMPLOYEES USED TO form a line at Wells Fargo Bank's Roseville, Calif., data center at the end of each workday, as they waited to present their laptops to a security guard, who would check each serial number against a list linking the laptop to a specific person's name.

In 2007, Mike Russo, senior vice president of automated identification technologies, decided to try to speed up that security process and test the value of radio frequency identification technology. "We put an RFID tag on the laptop and a picture of the individual in the database," he says, "so all the user has to do is pass the laptop over the RFID scanner and a picture of them shows up on the security guard's screen."

The new system sped up the checkout process and proved so popular that soon it was expanded to five other data centers.

**MORE ONLINE**
More information on the Financial Services Technology Consortium's work on data center asset tracking is available at **www.fstc.org/projects/index.php?id=29**

Russo started looking for other ways to use RFID technology. Among other things, he replaced a time-consuming bar-coding system that had been used to inventory IT assets such as servers, racks, network switches and peripherals.

"We have tagged 40,000 assets in our core data centers so far," he says, adding that an inventory process that used to take weeks using bar code scanners can now be done in a single day.

"Financial institutions using RFID are seeing on average a 90% decrease in the amount of time it takes to inventory their IT assets," says John Fricke, chief of staff at the New York-based Financial Services Technology Consortium, which has worked to establish a standard method of RFID tagging for IT assets. "Data centers replace their equipment on average every four years, and it is a significant spend. Customers are starting to say to vendors, 'If you can supply equipment pretagged with RFID, we'll be more inclined to buy from you.' "

RFID tagging could also make the merger-and-acquisition process much easier for IT groups, Fricke says. "There's a lot of time and energy involved in trying to find out what the acquired company's assets are and verifying that they exist."

Data centers currently make up a very small part of the RFID asset-tracking market, but as the early adopters in the financial sector report cost savings and security gains, IT leaders are taking a second look. ABI Research in Oyster Bay, N.Y., predicts that IT asset tracking will account for more than 10% of the RFID market by 2013.

RFID vendors and integrators are tailoring offerings for the data center, and vendors such as IBM and Hewlett-Packard Co. are starting to pretag equipment. A complete system for an individual data center might start at $50,000, according to RFID vendors' Web sites.

Using bar code scanners to track assets is both time-consuming and inaccurate, says Bill Conroy, senior vice president and infrastructure optimization executive at Bank of America Corp., which last year switched to RFID in 17 data centers.

"With bar-code technology, it took two weeks to inventory a whole data center," he says. "Now we can do that in one day and get 100% accuracy. That is a significant ROI." ■

**Raths** *is a freelance business writer in Narberth, Pa. Contact him at draths@mac.com.*

## ISSUES TO PONDER

**Wells Fargo's Mike Russo admits that deploying RFID in the data center isn't quite a no-brainer.**

**There are several issues to address, including the challenges of integrating the technology into the back-end asset-tracking system and re-engineering workflows for data center and audit workers.**

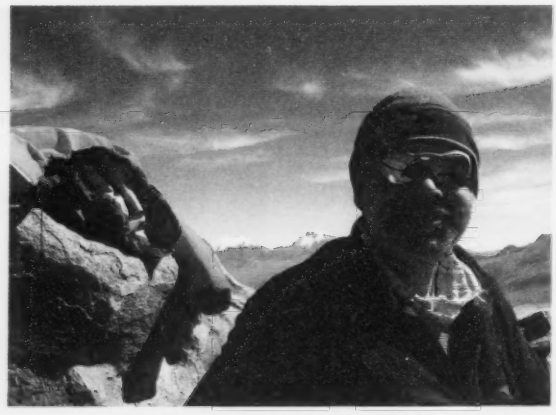
**"One question is whether to modify existing workflows or throw them out and start all over," Russo says. "We have found it cleaner and simpler to start over, pretending we've never done this before, rather than trying to insert RFID into an already existing process."**

**Moreover, if the organization has minimal experience with RFID, there has to be an internal champion to figure out how it might be beneficial. "A vendor may come in with a pie-in-the-sky pronouncement and tell you it will save you all this money," Russo says, "but no one will believe them."**

**Someone on the inside, however, might see how RFID could play a niche role, he notes. "You have to be realistic about where a gap or opportunity is."**

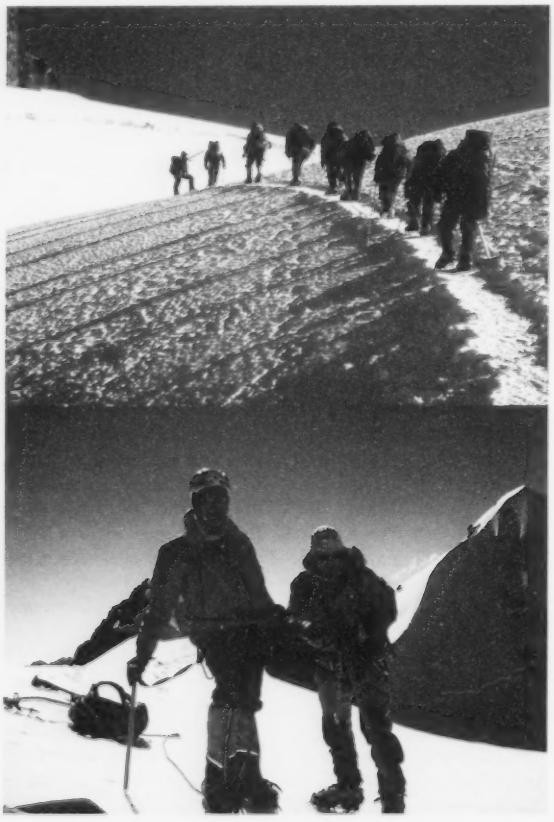
**– DAVID RATHS**

ILLUSTRATION © FOTOLIA / BENJAMIN HAAS



# How to Conquer Your Mountain

## Embracing an outside passion can enhance your work and save your life. By Armando Escalante



YOU'VE ACHIEVED success in IT and worked your way up in the organization. People are recognizing your work, and you are preparing to continue a great career. There's only one problem, one that you may not even recognize. It has quietly taken a back seat for many years and could sneak up on you and completely halt your success. It's your health.

Three years ago, like many IT professionals, I lived a sedentary lifestyle, putting my emphasis on work and family and none of it on my health. A good friend who was significantly overweight was my wake-up call. He was stopped in his tracks by a serious illness, and it took him several months to recover. I looked at him, realized I was heading down a similar road and resolved to make a change for the better.

I started by dramatically improving my eating habits, losing 60 pounds in 2006. At the suggestion of my eldest (health nut) daughter, I went to the Web site FitDay.com and started a free account. I used my cell phone and PDA to access the site and log everything I ate and drank each day. I had to be very honest with myself and quickly realized I was consuming more than 5,000 calories in a day, several days of the week! I initially reduced my intake to 2,500 calories each day.

Not only did I have to eat less, but I had to be more selective in my diet, avoiding sugars, refined flour and candy. I also reduced my red meat and alcohol consumption and surprisingly became

**Top: Armando Escalante takes in the scenery during a recent climb of 22,830-foot Mount Aconcagua on the border of Argentina and Chile. Middle: Putting one foot in front of the other during the slow trek up Pequeño Alpamayo in Bolivia. Bottom: Stopping for a rest with a fellow mountaineer.**

a fan of oatmeal. It was fun watching my weight go down using the online tool, and over time my waist size dropped from 42 inches to 36.

Following the weight loss, I realized I needed to add exercise in order to build muscle and increase my energy. Having never enjoyed or participated in any sports or outdoor activities in my life, I was not excited about this new habit. But I started with Bikram yoga and cardio kickboxing and found I had more energy than ever. Then I took it to another level and fell in love with the extreme sport of mountaineering.

Wait a minute: From couch potato to mountain-climber? How did that happen?

Well, I have to admit, it started on my couch. I was mesmerized one Saturday afternoon watching *Everest: Beyond the Limit* on the Discovery Channel, mistakenly thinking, "That doesn't look so hard."

I signed up for a climbing program, and my wife and I climbed Pikes Peak in Colorado (14,000 feet) together. My next challenge was Pequeño Alpamayo and Sajama in Bolivia (nearly 19,000 feet). And I am proud to have just returned from climbing Mount Aconcagua (22,830 feet), one of the Seven Summits on the border of Argentina and Chile.

It requires tremendous energy and strength to put one foot in front of the other until you reach the summit. And that's only half the battle, since you must eventually come back down! But I really consider mountain climbing more mental than muscle — about 60/40.

While I am achieving new personal goals I had never dreamed of, I am also reaching new heights in my career. My company, LexisNexis, is integrating ChoicePoint, which our parent company, Reed Elsevier Inc., acquired last year. The integrated business unit is positioned as an industry leader, with significant revenues in the risk information sector, and integrating the organizations' disparate IT systems is a daunting task. But for the adventurous soul, finding the summit of optimization is its own reward.

And instead of using this challenging work as an excuse to abandon my health and climbing goals, I let it inspire me. After all, accomplishing a major technology integration is not so different from scaling a peak. It involves training, hard work, acclimatization to a completely new environment and adherence to a demanding schedule. And it requires having a backup plan — which could include an important piece of equipment, a survival strategy or a fellow team member who's ready to come to the rescue. We have the right technology in place to achieve our goals, but we also must be prepared mentally as a team, with a strong sense of will to climb our collective mountain.

Mountaineering has also helped me improve my individual performance in the following ways:

■ **My problem-solving skills are stronger** because I have taken time away from the office and channeled my energy into a different outlet. Sometimes I use training workouts to gain perspective on a complex IT project or problem. After an intense workout, I can see an issue at work from a fresh angle.

■ **My mental clarity is enhanced.** When you are slowly trekking across ice in the bitter cold and wind, working furiously to maintain your balance and just keep moving, you truly gain perspective on what is important and what is not — because you're in a life-or-death situation.

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Loosely translated, my last name, Escalante, means "climber" or "the one who climbs" in Spanish, so I must have climbing, personally and professionally, in my blood. Whatever is in your blood, I encourage you to make time for it and develop yourself. You will expand your limits, improve your life and conquer that mountain in your career as a result. ■

**Escalante** *is senior vice president and chief technology officer at LexisNexis Risk & Information Analytics Group. Contact him at armando.escalante@lexisnexis.com.*

## A Trail Map to Health

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2 Get your family involved. My wife accompanied me on my first climb, and her companionship and support helped me to reach the goal.

3 Don't use lack of time as an excuse. There's always time to pursue your personal goals. It will mean planning ahead and making changes to your schedule, taking advantage of early mornings, lunch breaks and weekends.

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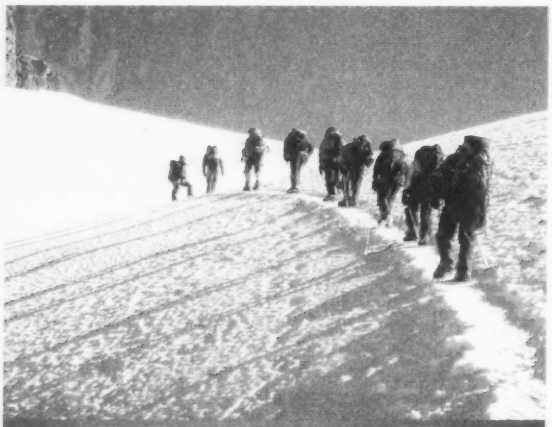

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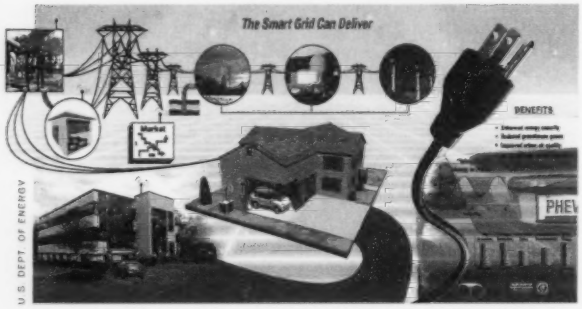
■ QUICKSTUDY

# The Smart Grid

## What is it, when will it get here, and what difference will it make? By Russell Kay




**The smart grid can reduce waste and provide benefits like enhanced energy security, reduced greenhouse gases and improved air quality.**

THE DEPARTMENT of Energy has called the U.S. electrical power grid the largest machine on Earth. It has over 9,200 generating units that produce more than 1 million megawatts of electricity. And they're connected to a network with more than 300,000 miles of transmission lines. In 2003, the National Academy of Engineering identified electrification, made possible by the national power grid, as "the most significant engineering achievement of the 20th century."

The power grid differs from a computer network in one basic respect: A computer network can store data until it's needed. Electrical power must be used at very nearly the moment it's generated.

Unfortunately, the current grid is a one-way system, funneling electricity from big centralized power plants to workplaces and homes with no feedback. It is old, it breaks down frequently, and it wastes energy. It must work nearly perfectly all the time; otherwise, problems and defects tend to cascade. In the past 40 years, the grid has suffered five massive blackouts, with three of them occurring in just the past decade. Even worse, power companies often don't know that they've had a power outage until customers call to complain.

Because providers can't easily detect demand fluctuations, power plants have to run at full capacity all the time, most burning carbon-emitting fossil fuels. Between 5% and 10% of power is lost in transmission.

### THE ALTERNATIVE

A smart grid would use digital technology for two-way communication between producers and consumers. It could address individual devices, enabling home appliances to use electricity only when it's abundant and inexpensive. Electricity managers could examine their systems, identify and avoid problems, and get information about blackouts and power quality in real time.

The DOE says that a smart grid needs to include these five basic elements:

- Integrated communications for real-time information and control.
- Sensors and measurement technologies for monitoring and reporting line conditions.
- Advanced components, such as superconducting power cables.
- Control and monitoring methods that make it possible to solve problems quickly and accurately.
- Improved interfaces and decision-support tools.

### BENEFITS

A smart grid would save energy and emit less carbon. It would have intelligent, networked electric meters that could track electricity use and adjust rates and usage patterns automatically. It would make it easier to integrate alternative, intermittent power sources like wind and solar into the electrical supply. And it would have more-efficient, superconducting transmission lines to reduce losses.

A smart grid would let a community use local power when electricity wasn't available from outside sources. For example, if a community were disconnected from the grid, a home could use power from local rooftop solar cells or small hydroelectric and wind generators until the connection was re-established.

Several precursors to the smart grid are being piloted.

Boulder, Colo., is a testbed for smart-grid technology. About 14,000 homes there can check online to see how much power they're using, program appliances over the Web and choose their power sources. For example, they can set their dishwashers to run only when solar power is available. The local power utility, Xcel Energy Inc., can remotely turn down thermostats or shut off hot-water heaters in participating homes. The system is too expensive for general adoption now, but the Boulder pilot should help work out problems for future implementations.

And Google Inc. recently announced Google PowerMeter, a platform for home energy information. Selected employees are currently testing it, using home energy monitors to record power usage. A gadget on their iGoogle home pages shows how much energy they're using, with historical tracking and trend forecasting. ■

**Kay** *is a* Computerworld *contributing writer in Worcester, Mass. You can contact him at russkay@charter.net.*

### Definition

**The term "smart grid" refers to a modernized electrical power distribution network with long-distance transmission lines that incorporates networked intelligent digital sensors to optimize operations, benefit customers and the environment, increase efficiency, and coordinate small and alternative power sources.**

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# Parting the Clouds at The RSA Conference

**Cloud computing** and **virtualization** are our manager's focus as he attends one of his **favorite conferences** of the year.

Trouble Ticket

**AT ISSUE:** The IT department has put cloud computing on a fast track, leaving security behind.

**ACTION PLAN:** Find good sources of information and pepper the vendors with questions.

OTHER THAN various one- or two-day seminars, I attend two main conferences each year, the RSA Conference and Interop. I like RSA because its focus is on security. And I like Interop because its focus *isn't* on security. That is, because information security requires fairly comprehensive knowledge of all facets of IT, Interop is valuable in allowing me to round out my knowledge.

At the RSA conference, I feel like the proverbial kid in a candy store. So many topics, so many interesting tracks, coupled with discussions from industry experts. All the sessions are so tantalizing, it's nearly impossible to decide which to attend. What works best for me is to choose a couple of areas of concentration and then head for the sessions that sound most relevant and interesting.

I was back at RSA last month, and this time my areas of concentration were cloud computing and virtualization. I've mentioned before that my company's IT department has been meeting with several cloud computing vendors to determine whether moving some of our server infrastructure to the cloud would save the company both capital and operational expenses.

We're in a fairly serious slump, so the project is timely. Of course, when an initiative gains momentum quickly — like this one has — security is often left in the dust. Before things get out of hand, I want to be sure I've provided appropriate and meaningful security requirements. At RSA, I was hoping to gain additional knowledge to help me ask the right questions the next time the cloud vendors show up.

Another valuable resource in helping me evaluate the security risks of cloud computing is a document prepared by the Cloud Security Alliance.

**■ When an initiative gains momentum quickly – as cloud computing has – security is often left in the dust.**

(You can download the PDF at the alliance's Web site.) Focusing on 15 key domains of concern, this document provides in-depth insight and perspective. Since it's more than 80 pages long, I can't just hand it to a cloud vendor and ask for comments. Instead, I will extrapolate key points, combine them with my own, and create a cloud computing security controls matrix, similar to what I've done for application security.

## GOOD QUESTIONS

Each of the 15 domains covered in the document raises some very interesting points. For example, what happens when a cloud vendor is served with a subpoena? Will it tell the affected customer? Or what if we don't want our source code to live on servers in Russia? Can we opt out of certain geographical points of presence? And in the case of a vendor that provides data encryption for its customers, who manages the keys? I don't have space to do justice to what the CSA document covers, but I can tell you that it is a good starting point and will stimulate you to think of other concerns.

But back to RSA and my other area of concentration, virtualization. Those sessions simply validated the concerns that I have already brought to the attention of the project team that's deploying VMware virtualization tools. For example, the VMotion feature allows you to move virtual machines from one physical server to another with no noticeable downtime. From a security perspective, such movements had better happen on a dedicated virtual LAN. Then there's vCenter Server, which allows us to provision, monitor and manage a virtual data center through a single interface. If you don't lock this application down properly, a malicious user could cause some serious damage, without having to walk into the data center.

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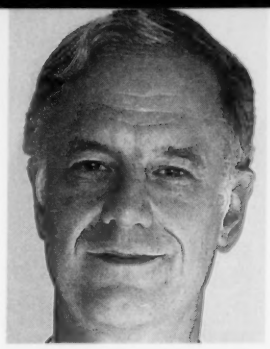
So, once again, the RSA Conference was well worth my time. Now I'll work on creating my cloud computing security controls matrix. ■

*This week's journal is written by a real security manager,* **"Mathias Thurman,"** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

■ OPINION

Bart Perkins

# Texting Rules!



VIRTUALLY ALL companies want to increase communication with their customers. But few are taking full advantage of text messaging, even though its use is rapidly increasing, especially among younger generations. Part of the reason may be a lack of familiarity with the texting process. At a recent conference for IT managers, half of the 500 attendees admitted that they were unable to send a text message. Even fewer are familiar with common texting shorthand. Virtually none could expand the text message "Imnerho phs pebcak sit" into its real meaning. ("In my never ever remotely humble opinion, pointy-haired stupidvisor problem exists between chair and keyboard. Stay in touch.") Fortunately, corporations with novice-level understanding can get help from specialized firms such as 3Cinteractive, HipCricket and iLoop Mobile.

Pioneering efforts to use texting in business vary widely. ESPN and Disney encourage viewers to participate in various programs and broadcasts via texting. PNC Bank's "Virtual Wallet" allows text-based banking. When a major fiber-optic cable was recently cut in the San Francisco area, AT&T used Twitter to keep customers informed. Attendees at concerts and sporting events can text to win free food or event souvenirs.

Part of texting's appeal is that it's significantly less expensive than reaching customers through newspapers, radio, TV, e-mail or direct mail. It has other significant advantages over standard marketing/advertising approaches as well. Here are some of them:

**Less spam.** Spammers send more than 100 billion e-mails per day to approximately 1.3 billion e-mail users worldwide. In contrast, text messages are sent via carriers that are determined to keep spam from invading and overwhelming their networks. Carriers monitor message traffic closely and shut down detected spammers. Companies that use text messages are strictly limited to permission-based access.

**Rapid market penetration.** According to market research firm SNL Keagan, in 2007 84% of the U.S. population had cell phones. In a recent CeBIT keynote address, Intel Chairman Craig Barrett stated that at the end of last year, there were more than 3 billion cell phone subscribers worldwide. The number of cell phone users in China now exceeds the total population of the U.S. Worldwide, there are now 2.3 times more cell phone subscribers than e-mail users.

**■ 95% of text messages are opened and read.**

**Compelling demographics.** Text messaging is the preferred communication mode for young adults, a group heavily targeted by marketers. And children are already text-fluent. In my daughter's middle school, 97% of the students have cell phones, and roughly half can text without looking at the keys. According to a study by German technology advocate Bitkom, people age 14 to 29 would rather give up their relationship partner than their cell phone — by a 2-to-1 margin!

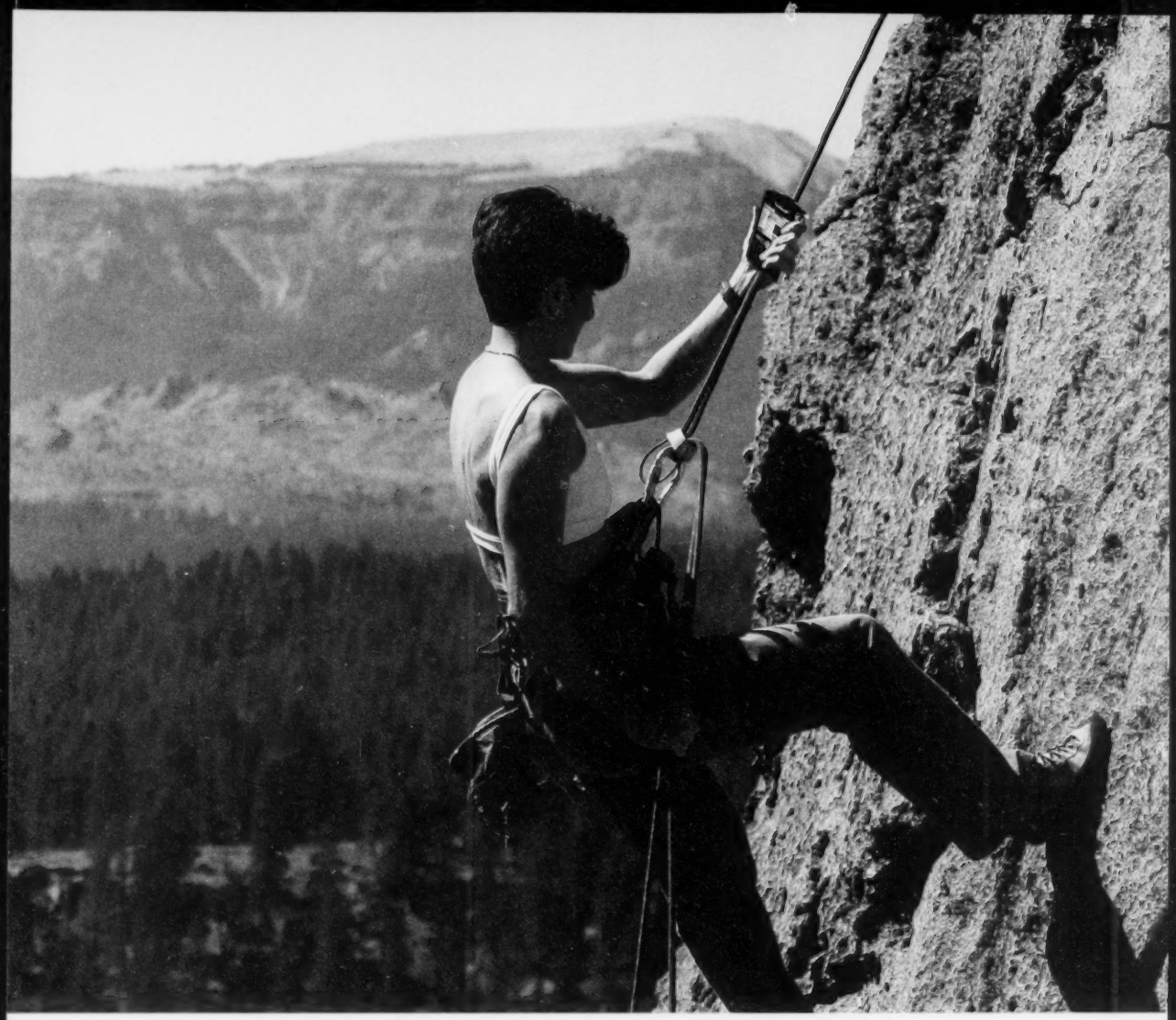
**Trust.** Opt-in policies ensure that most text messages come from people or organizations known to the phone's owner. As a result, 95% of text messages are opened and read. (A marketing dream come true!) And the immediacy of texting makes it feel more personal than other forms of electronic communication. Real-time chat among multiple people is common.

**Location-aware computing.** Cell phone portability and features encourage people to take their phones almost everywhere. Phones automatically track positioning coordinates, allowing people to receive text messages targeted to their specific location. Using GPS/GIS capabilities, a store can send time-sensitive coupons to customers in the store's vicinity. Similarly, amusement parks can send messages to visitors who are close to rides with short lines.

Text messaging offers new opportunities to engage customers. If texting is not already part of your marketing or customer service plans, consult with your marketing and advertising departments and expand your enterprise architecture to harness this incredible power. Organizations can leverage text messaging to expand customer communications, increase sales and improve customer satisfaction.

GTG C U! ■

**Bart Perkins** *is managing partner at Louisville, Ky.-based Leverage Partners Inc., which helps organizations invest well in IT. Contact him at BartPerkins@LeveragePartners.com.*



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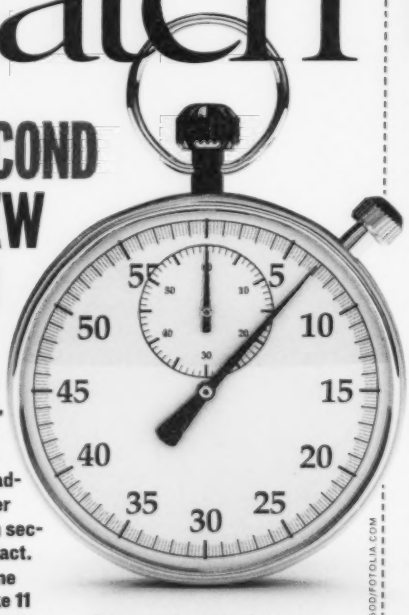
# Career Watch

## THE 7-SECOND INTERVIEW



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**Of course you want to make a good first impression when you go for a job interview, but bear in mind that the initial impression you make will be broadcast to the interviewer very quickly. In seven seconds, as a matter of fact.**

**That's how much time it takes people to make 11 decisions about us in a first encounter, according to a study conducted by neuroscientists from New York University and Harvard. Using functional magnetic resonance imaging, they examined brain activity as study participants made initial evaluations of fictional individuals. The fMRI results showed significant activity in two areas: the amygdala, which previously has been linked to emotional learning about inanimate objects and to social evaluations based on trust or race group; and the posterior cingulate cortex, which has been linked to economic decision-making and assigning subjective value to rewards.**

**These are the 11 traits that people make decisions about in those first seven seconds: education level, economic level, perceived credibility and believability, trustworthiness, level of sophistication, sexual identification, level of success, political background, religious background, ethnic background, and social and professional desirability.**

PAGE COMPILED BY JAMIE ECKLE.

**1 PER SECOND**

**The rate at which professional networking site LinkedIn.com is adding new members. What's more, comScore Inc. reports that the number of unique monthly visitors to LinkedIn increased from 3.6 million in February 2008 to 7.7 million in February 2009.**

■ **Q&A**

## Peter Cannone

The **CEO of OnForce** discusses trends gleaned from data on the online marketplace's 12,000 service professionals.

**Do you think the work orders you receive are early indicators of what's happening in the IT landscape?** Yes. The volume and nature of service orders we receive provide us with unique data on market trends and growth opportunities. We just issued our OnForce Services Marketplace Index for the first quarter of 2009, a comprehensive analysis of nearly 70,000 service events across North America.

**What did the indicators suggest at the end of 2008, and how has that played out in Q1 2009?** Over the course of 2008 and into 2009, one of the most salient trends to emerge is the "fix mentality." We know from our customers that they're looking to fix things first and then buy only if necessary. In Q1, nearly two-thirds of all work orders generated through our marketplace were in the "break-fix" service sector. We anticipate that businesses will continue to delay purchases of new or even low-cost equipment and opt for break-fix services for the foreseeable future.

We've also seen our customers turn to alternative IT solutions to help manage costs. For instance, in order to help curtail travel expenses, in Q1 we saw companies conducting more meetings via videoconferencing and making larger investments in projector technology.

One exception in the break-fix mentality is in networking. As businesses try to boost productivity, we've seen an increasing demand for robust networks that offer more connectivity, more bandwidth and more information exchange. Nearly 85% of all our network jobs in the first quarter were for new installation and setup, versus repair.

**What do you foresee for next quarter and beyond?** With the economic clouds still looming, we foresee that most businesses will remain in cost-saving and belt-tightening mode for the remainder of 2009.

In addition to the increase in the "break-fix" sector, we also expect that businesses and end users will shift to a "cheap can be chic" buying model – for example, choosing non-branded PCs and netbooks. We also expect an increasing reliance on the outsourcing of corporate IT functions and a renewed focus on low prices.

**Any particularly hot skills to report?** As organizations increasingly look to cut costs in the face of shrinking revenue, it's not surprising that the adoption of VoIP has been strong due to its cheaper cost compared to traditional telephony services. We anticipate an increase in VoIP and in networking jobs as more businesses adopt these technologies.

– JAMIE ECKLE

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# Shark Tank

## TRUE TALES OF IT LIFE AS TOLD TO SHARKY

### It's All in How You Ask

This organization is moving to a new building with built-in furniture, says pilot fish making the move. That means he can't bring his keyboard stand that's adjustable for both height and tilt. Wanting similar flexibility in his new digs, fish talks to the furniture planner, who tells him the new offices will be equipped with keyboard drawers. That won't work, fish tells her; they're always at the wrong height, and the frame gets in the way while he's typing. The catalog lists an articulated support that folds under the desk and is adjustable for height and tilt. But it's not on the list of approved items. Fish looks planner straight in the eye and says, "I have been working in the computer field for more than 25 years, and one reason I have had no hand or wrist problems is that I have always been very careful to keep my keyboard in the right position for stress-free typing. I believe I just heard you tell me that the furniture manufacturer we are using makes products that are intended to help employees avoid workplace injuries, but our management will not permit us to use those products. Do I understand you correctly?" After a very long pause, planner says, "I'll see what I can do." Reports fish, "When we moved into our new offices, mine had the adjustable keyboard supports I had requested."

### But Thanks for Asking

This IT shop tries to keep lines of communication open with users, but it doesn't always work, says pilot fish on the scene. Regional offices, in fact, can be confounding. For example, he says, they were asked: "Do the solution options we outlined for you make sense? If so, we'd like to have you choose the one that makes the most sense for you so we can implement it Thursday. Please let us know right away." Their answer: "Thank you." "My personal favorite, though, was when we asked, 'How many backup tapes do you currently have in your office?' "Their answer: 'All of them.' "

### Size Matters

Help desk ticket comes in: User can't send out PDF files. "Our mail system is rejecting my e-mail message," user complains. Support pilot fish quickly determines that the message's size, 15MB, exceeds the allowed limit. How do you create these files? he asks user. "We fill out a Word form, then print it out and scan it into a PDF file as an image," says user. Fish politely points out that a simple add-in can convert the file directly from Word to PDF. One add-in later, the two files drop in size to just under 200KB. "Just for grins, we looked back through old tickets from this same user," fish says. "We noticed repeated requests for an increase in his mailbox space. Go figure."

■ *Sharky has room in his mailbox for true tales of IT life at sharky@computerworld.com. You'll snag a snazzy Shark shirt if I use yours.*


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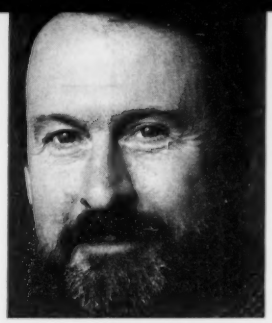
■ OPINION

Gary Anthes

# Users Are Part of Your Systems



YOU CAN PLAY a video game called Fold.it on the Web while making important contributions to science. Understanding how 3-D proteins "fold" into their optimum structures is critical to understanding disease, but it's difficult computationally because there are an astronomical number of possible folds for most proteins.

The thousands of people who play Fold.it use their pattern-recognition and puzzle-solving skills to predict protein structures in a way computers can't easily duplicate. "Teenaged gamers are beating the pants off Ph.D. biochemists," says Ed Lazowska, a computer science professor at the University of Washington, where Fold.it was created.

Fold.it is an example of two enormously important trends. One is the marriage of computer science with other sciences such as biology, and the other is the emergence of hybrid systems in which people are not just users, but integral parts of the system.

I recently visited the computer science department at Carnegie Mellon University and was briefed on a dozen or so projects, all involving at least three disciplines. For example, biologists, linguists and computer scientists have combined medical models, language analysis tools and machine learning to understand the "language" of molecules and thereby detect the chemical signals of organ transplant rejection. A researcher said she couldn't imagine making progress without all those disciplines working together.

That same week, I attended a seminar on advanced applications of computer science, sponsored by the Computing Community Consortium. Alfred Spector, research vice president at Google, spoke of his company's vast "cloud" that not only computes but also taps into the intelligence of millions of users in order to make Google applications work better. He advised, "The focus of design should not be on the computer and software itself, but rather the computer and software in conjunction with its user community."

**■ The days of stovepipe IT – in systems, projects and people – are over.**

Then Luis von Ahn from Carnegie Mellon described his reCAPTCHA project. He's the inventor of CAPTCHAs, those distorted words on Web registration forms that people can read but computers can't. He figured out how to help digitize *The New York Times*' paper archives by harnessing the energy that millions of people collectively spend on this security measure every day. Words that the *Times*' optical character recognition software can't read are sent to a free CAPTCHA engine used by various Web services. Users are now deciphering 35 million words a day as they process these CAPTCHAs. Von Ahn says the job, which would have taken years with human editors, will be finished in just a few months.

Jon Kleinberg, a professor of computer science at Cornell, told of his pioneering studies of the social networks behind Facebook, Flickr, LiveJournal and other "systems" that incorporate the knowledge and experience of millions of users. He spoke of a profound change in the way knowledge is created and shared, once mostly top-down from a select few authorities, but now increasingly bubbling up from millions of individuals with wildly varying levels of authority, credibility and underlying intent.

This calls for new tools for verifying the authority and credibility of information. And Kleinberg said designers of hybrid computer-human systems should combine social models with traditional computer tools and employ algorithms that take into account game theory, incentives, reputation, recommendations and other human factors.

Even if you are in more traditional areas of IT, there are lessons here. First, look for ideas outside of IT. Be a Renaissance person. The days of stovepipe IT — in systems, projects and people — are over.

Second, make your users part of your systems — an IT asset. Mine their preferences, study their habits, learn from their mistakes, and feed their recommendations and social behaviors back into your systems. Maybe you could give them an online game to play. ■

**Gary Anthes** *is a former* Computerworld *national correspondent.*

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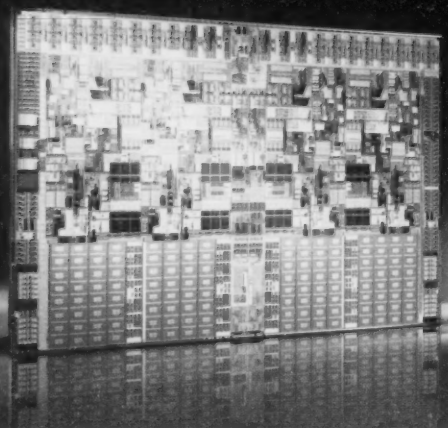

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